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The OIL WEEKLY

A Journal for Oil Producers and Field Men

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Vol. 26. No. 12 SEPTEMBER 16, 1922 10 Cents Per Copy

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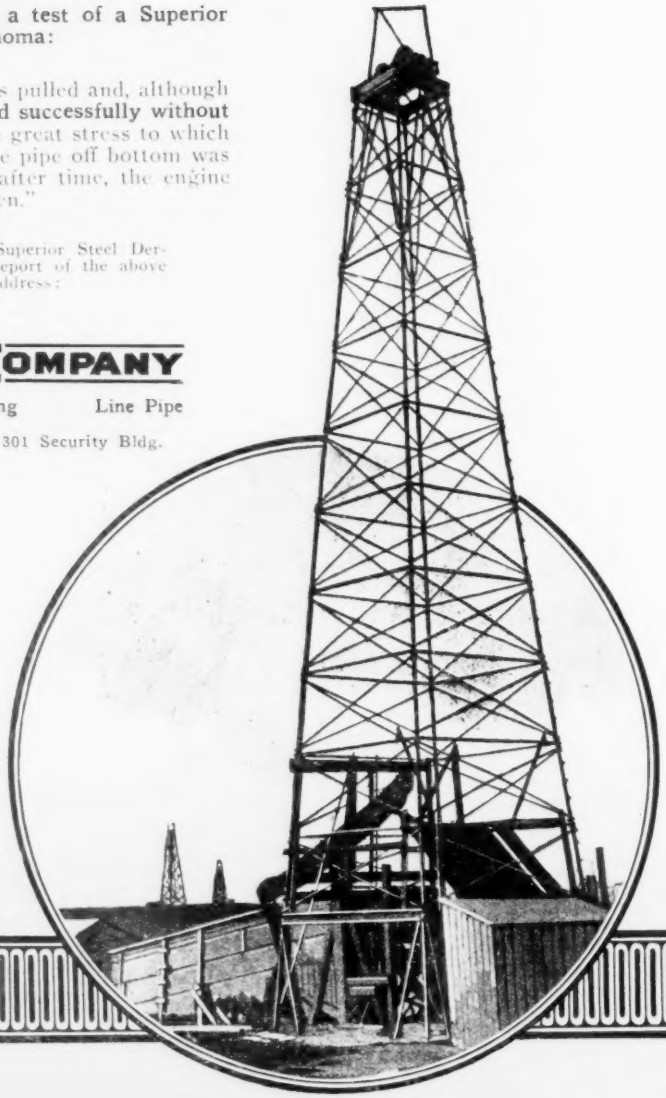

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KOSSE POSSIBILITIES

Field may develop largest producers in country. Page 12.

OKLAHOMA FIELD A FACTOR

New Tonkawa field in North Oklahoma is now producing 12,000 barrels and promises to become a factor in Oklahoma production. Page 10.

INTERESTING WILDCAT

Young County, Texas, wildcat producer has increased to 2500 barrels after drilling deeper. See page 29.

WATCHFUL WAITING

North Texas refiners and producers are anticipating another reduction in price of crude. Page 11.

ANOTHER ONE FOR SMACKOVER

The Standard Oil Company gets a 2000-barrel well offsetting the discovery well in Arkansas' new oil field. Turn to page 49.

NO CURTAILMENT HERE

California production is mounting higher each day, and there are no present indications of a breaking point. See Page 54.

PERMITS AND MORE PERMITS

Texas operators are keeping Austin officials busy granting drilling permits. Permits issued during the past week begin on page 32.

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KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—side reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

CURRIE AGAIN

In spite of all the spectacular events happening in Central West Texas the older producing districts are not to be kept under cover. Another big well for Currie. Page 35.

WHAT ABOUT WEBSTER PARISH?

Louisiana operators are now guessing whether or not Webster Parish producer is so good after all. Story on page 46.

MEXICAN EXPORTS SLUMP

August shipments show a decrease of about 3,000,000 barrels over the previous month. Page 57.

DAME RUMOR AGAIN BUSY

This time she chooses Cosden and Company and the Dutch-Shell as her subjects. Is the Tulsa refining company to be taken over by the Shell combine? See page 50.

QUICK CEMENTING PROCESS

New idea used on West Coast claimed to set cement in four days. Chemicals used. Page 55.

NOT DEAD YET

The various fields of New York, Pennsylvania and West Virginia are still holding their place in the field development column and the past week saw many completions in spite of the hottest week of the season. Page 51.

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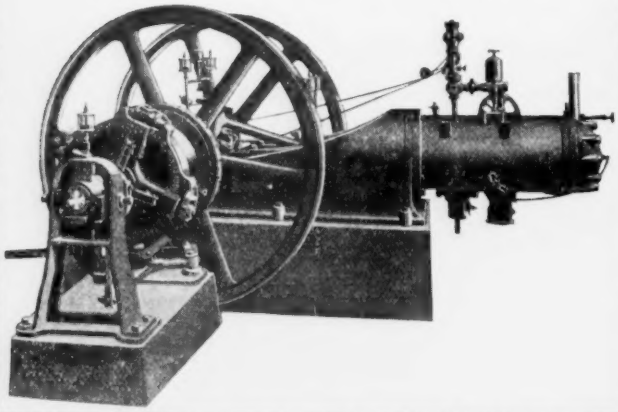

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THE OIL WEEKLY

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Let's Get Right

THE associate editor brought it in to our office in one long string. Set in one column width, six point type, it was more than a yard long.

"Now about that editorial you were going to write," he said.

"Yes," we responded, "don't know whether to write about curtailment, or investigation or the Mexican situation, or to hazard a guess about the effect of the Mexican drop on California crude," we answered. "What the devil is that you have in your hand?"

"This is your editorial," he answered. "It is a list of the permits granted to drill wells in Texas during the past week."

We looked 'em over. And we thought that Texas had been taking a lead in curtailing production, too.

It's got us floored. That may not be grammatical, but its the truth. If Texas keeps on getting permits to drill like she did last week, and if Oklahoma keeps on spouting oil like she has for the past few months, and if Wyoming and California keep jumping their production—

We'll all soon be in a helluva fix.

Everybody seems to want to talk curtailment, but the only curtailment they will do is curtailment forced upon them. The oil producers are our friends, but, boys, it looks like you have all gone on a drunk and somebody will have to help carry you home.

Unless you curtail drilling all the king's horses and all the king's men won't be able to put some of you together again.

It's all right to store oil but we've done some little figuring on the question of storing oil since we talked to you last. If you have to store oil for, say two years, to get $2.50 a barrel, how well off will you be with that oil in storage. Figure up the question of tankage, taxes, evaporation (sharpen your pencil when you get to that point), insurance, and a few other items, and you'll find that you'll be piling up a bit of overhead that will eat more money than you ever thought was in circulation.

Let's get right. Of course you figure—

"Oh, that bird who is writing that stuff has got to put something in to fill up the paper, and as everybody is talking curtailment now, he has to do it, too, to keep in style."

But we don't give a damn for style, if that is worth anything to you. But we do give a damn for the oil business, because our business is so closely tied up with it that you couldn't stick a cigarette paper between 'em.

We're talking facts. There is too much oil being produced, and at the present rate of operations, there'll be too much produced six months from now.

Let's get right and use some common sense.

How You Can Help

WE are endeavoring to print just the kind of a journal that our readers in the production and pipe line branch of the oil business want, and we believe that we are succeeding to some extent, because we are **adding** new subscribers at the rate of more than a thousand a month —but we're not satisfied.

We want suggestions from field men and executives as to what they are interested in. Thanks to some of our field friends, we have had tips on various improvements in field methods, etc., that have lead to the working up of interesting articles. And we'd like to have more such tips.

The OIL WEEKLY should be practical, and it is our idea to give more than the mere news of oil the world over. We have a pretty good staff of writers, but we are continually buying good articles on field management, on how John Doe did something a little better than the other fellow. So if you have a good article on how to do something a little better, submit it to our editorial department, and if we can use it, we will advise you the rates we pay for such articles.

All such letters should be addressed to the Houston office—and remember, the article doesn't have to be a long one either. We're just as glad to get short ones.

The OIL WEEKLY wants only such subscribers as are engaged in the oil producing or pipe line business, or subbranches of the producing and pipe line business. It has no desire for investor circulaton, and it reserves the right and will execute the right to reject subscriptions coming from persons whose only interest in the oil industry is through the purchase of oil stock.

R. L. DUDLEY, Publisher.

Tonkawa Field Promises to Be Factor

Oklahoma pool now producing 12,000 barrels and getting better

By Grady Triplett

TULSA, OKLA., Sept. 12.—The Tonkawa field, with a daily production of more than 12,000 barrels, now promises to become a factor in the oil output for North Oklahoma.

Although the major part of present production is from the southern part of the field, sections 10 and 15 in township 24, range 1 west, Noble County, the future promise of the field is to the north in sections two and three of this township and range, with section 34 of township 25, range 1 west, in Kay County, offering still further scope to this producing area.

That the north part of the field has an excellent producing horizon below the 2100-foot level is shown by the record of the Comar Oil Company's well on the Carmichael tract, which came in June 7 for 800 barrels and is now making around 600 daily. At various times its daily output has been in excess of its initial flow. August 15 it had produced a total of 51,431 barrels.

Just now this part of the field is under careful observation as to its productivity from the 2600-foot sand, which is the chief producing horizon in the southern part of the field. The Comar Oil Company is drilling No. 3 Carmichael down to this sand, having passed up a good well at just below 2100 feet. Should the lower sand prove attractive, this part of the field will be dotted with twin wells, just as the southern section is at present.

Into Kay County

That this northern pool extends into Kay County is indicated by the Pennok Oil Company's well in the southeast corner of the southeast of 34-25-1 west, which is now making 45,000,000 cubic feet of gas at 1610 feet. The 12½-inch tools were blown from the hole and the rig damaged. If the well can be saved, it will be drilled to the 2100-foot sand. At 800 feet, where gas is found over both sections of the pool, 20,000 cubic feet of gas was mudded off in this hole.

These two wells with others drilled in these sections and also in section two of township 24, range 1 west, soon will establish the extent of the productive formations in the northern part of the field. From geological data available, the contours are given as extending over these three sections.

Just now most of the production of the field is coming from the See land in the northwest quarter of section 15-24-1 west, developed by the Comar Oil Company (Marland and Roxana) and the Murray fee of the southwest quarter of section 10-24-1 west, drilled by the Southwestern Petroleum Corporation. These leases are yielding a daily output of around 10,000 barrels from 14 wells, some of which were drilled to the 2100-foot level, others to the better sand at 2600 feet.

At one time the Amerada Petroleum Corporation had substantial production on the Smith lease in the northeast quarter of section 15-24-1 west. Wells here in the 2100-foot sand were short lived and the output is now but little more than 300 barrels daily, most of that coming from two recent wells completed in the first oil bearing sand at 1975 feet.

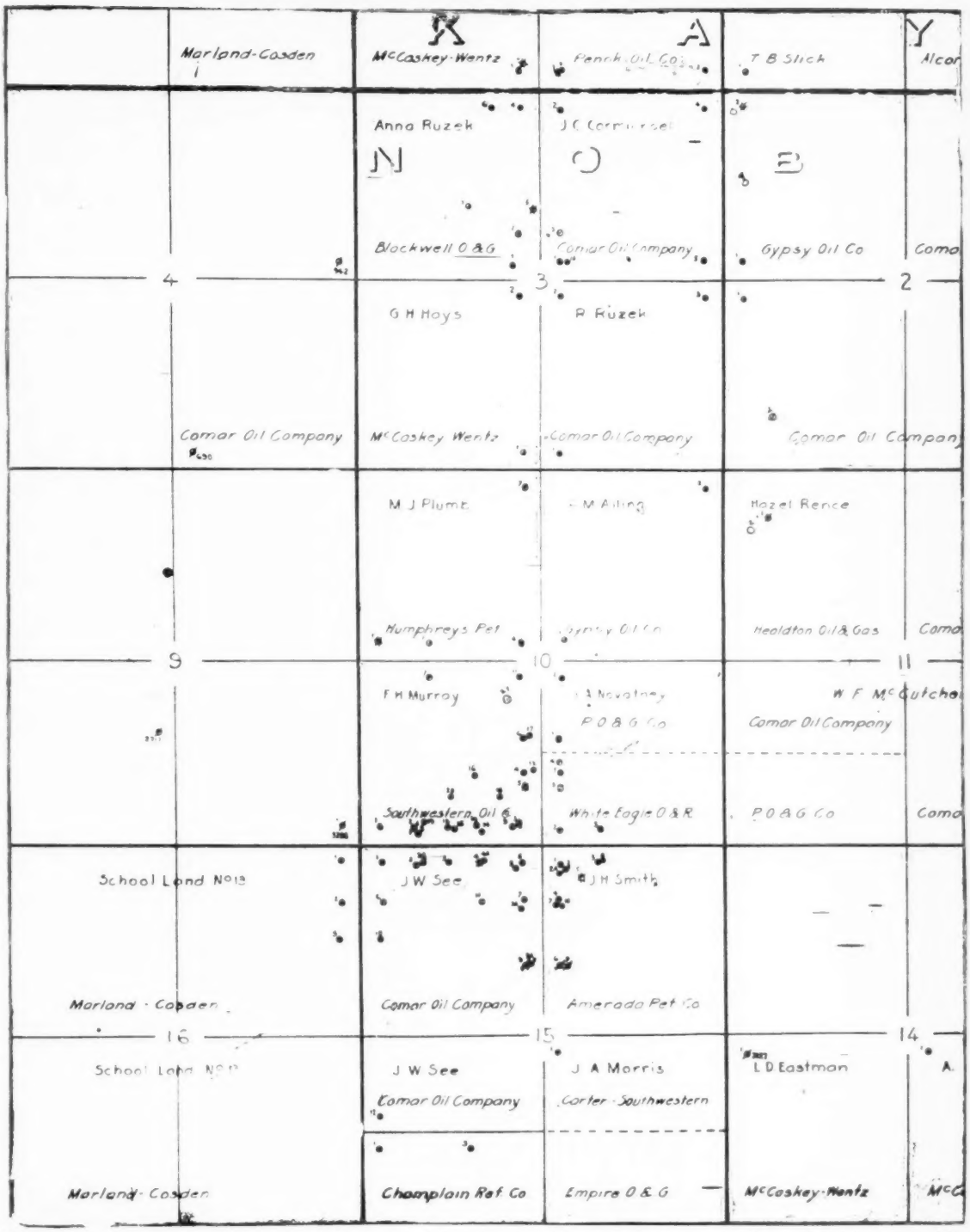
Developments Slow

Development in the Tonkawa field since the first wells were completed by the Marland and Cosden concerns on school land in the northeast corner of section 16-24-1 west one year ago, has been very slow. Two causes have been responsible. For one, heavy gas pressures from 800

Completion Record for the Tonkawa Field, Showing Present Daily Output for Each Lease

Lease, Location and Date—	Depth	Initial Prod.	
Amerada Petroleum Corporation—			
Smith 1, NWc NW NE 15-24-1w, 5-13-22	2120	700	
Smith 2, NWc NE 15-24-1w, 8-2-22	2190	*	
Smith 3, C NE NW NE 15-24-1w, 5-24-22	2140	500	
Smith 4, C SW NW NE 15-24-1w, 5-6-22	2130	1200	
Smith 5, C SE NW NE 15-24-1w, 4-15-22	1512	¶6	
Smith 6, C NW SW NE 15-24-1w, 8-9-22	2180	*	
Smith 7, SWc NW NE 15-24-1w, 8-27-22	1980	350	
Smith 8, NEc NW NE 15-24-1w, 9-3-22	1975	60	
Present daily average			325
Blackwell Oil and Gas Company—			
Ruzick 1, NEc SE NW 3-24-1w, 3-24-22	870	¶15	
Ruzick 2, SEc NW 3-24-1w, 3-24-22	870	¶4	
Champlin Refining Company—			
Morris 1, NWc SW SW 15-24-1w, 6-10-22	2010	150	
Present daily average			100
Comar Oil Company—			
See 1, NWc NW 15-24-1w, 10-22-21	2610	3000	
See 2, NEc SE NW NW 15-24-1w, 5-13-22	2130	10	
See 2-A, NEc SE NW NW 15-24-1w, 2-27-22	2630	2000	
See 3, C N L NW 15-4-1w, 7-1-22	2630	1500	
See 4, C NW NE NW 15-24-1w, 7-1-22	2135	¶8	
See 5, NEc NW 15-24-1w, 2-10-22	2120	¶35	
See 6, C SW NW NW 15-24-1w, 4-8-22	2635	1100	
See 8-A, C NE NW 15-24-1w, 6-24-22	2635	2000	
See 9, C NE SE NW 15-24-1w, 8-12-22	1700	*	
See 10, NWc NW SW 15-24-1w, 9-4-22	2629	900	
Present daily average			4,860
Carmichael 3, SEc NEq 3-24-1w, 6-12-22	2115	800	
Present daily average			610
Ruzek 1, Sec 3-24-1w, 5-24-22	2130	60	
Present daily average			10
Total daily average			5,480
Healdton Oil and Gas Company—			
Rence 1, NWq NW 11-24-1w, 6-12-22	890	¶5	
Humphreys Petroleum Company—			
Plumb 1, SWc SW NW 10-24-1w, 4-18-22	870	¶5	
Plumb 4, SE NW 10-24-1w, 8-9-22	2645	700	
Plumb 7, NEc NE NW 10-24-1w, 4-18-22	870	¶2	
Present daily average			525
Marland & Cosden—			
School land 1 (discovery well), C NE 16-24-1w, 8-4-21	2660	1000	
School land 2, C SE NE 16-24-1w, 5-6-22	2650	2000	
Present daily average			400
McCaskey & Wentz—			
Hays 1, SEc SW 3-24-1w, 6-10-22	2600	*	
Hays 2, NEc NE SW 3-24-1w, 5-4-22	910	¶2	
Prairie Oil and Gas Company—			
Novonty 1, SEc SW NW SE 10-24-1w, 6-10-22	2130	75	
Novonty 2, NWc NW SE 10-24-1w, 8-11-22	2124	360	
Murray 1, SEc SE 9-24-1w, 12-13-21	3285	*	
Present daily average			315
Southwestern Petroleum Corporation—			
Murray 1, SWc SW SW 10-24-1w, 10-25-21	2640	1600	
Murray 2, C SE SW SW 10-24-1w, 6-27-22	2160	*	
Murray 3, C SE SE SW 10-24-1w, 6-23-22	2125	¶9	
Murray 4, SEc SW 10-24-1w, 5-7-22	2120	¶37	
Murray 5, NEc SE SW 10-24-1w, 5-15-22	1775	¶5	
Murray 6, SEc NE SW 10-24-1w, 5-24-22	2140	230	
Murray 7, NEc NW SW 10-24-1w, 5-6-22	2650	*	
Murray 8, C SE SW 10-24-1w, 5-17-22	2635	2000	
Murray 9, SEc SW 10-24-1w, 8-9-22	2630	1600	
Murray 10, SWc SE SW 10-24-1w, 6-7-22	2130	250	
Murray 11, NEc SW 10-24-1w, 8-9-22	2635	1000	
Murray 14, SWc SW SE 10-24-1w, 9-4-22	2615	1500	
Present daily average			5,380
White Eagle Oil and Refining Co.—			
Novonty 1, NWc SW SE 20-24-1w, 3-15-22	2120	200	
Novonty 2, SWc SE 10-24-1w, 7-2-22	2030	*	
Novonty 3, SEc SW SE 10-24-1w, 12-27-21	900	¶3	
Novonty 5, C S L SE SW SE 10-24-1w, 7-21-22	2125	350	
Present daily average			300
Daily average for Field			12,825

The Tonkawa Field of Noble and Kay Counties, Oklahoma, Townships 24 and 25, Range 1 West



feet on down have resulted in scores of fishing jobs.

Again, it has required much time to eliminate dry areas by drilling. The south pool is now known to be small because of dry holes. The extent of the north pool is yet to be determined. Although not yet established, it is thought the two pools are connected by a narrow neck.

Because of the excessive gas pressures, rotary rigs have been brought into the field, although a majority of the wells drilling are by cable tools. The Comar well No. 3 on the Carmichael fee, which passed up production at 2100 feet in order to test the lower formations, was drilled by rotary. The 2600-foot level, however, will be drilled into with cable tools.

The quest for oil in the immediate Tonkawa vicinity dates back to 1918 when the Humphreys Petroleum Company drilled on the Kirkpatrick fee in the northwest corner of the northeast quarter

What Are the Possibilities in Kosse Area?

Producing formation equivalent to that found in oil fields of Mexico

HOUSTON, TEXAS, Sept. 14.—Possibilities of the Edwards lime producing wells in the Kosse section of a greater magnitude than heretofore found in that vicinity are being considered by students of the situation there. The fact that the Edwards lime, from which it appears the Jones well of the Humphreys interests at Kosse is producing, is the geological equivalent of the Tamasopa lime, from which the oil in the Tampico section is produced, has led to a number of interesting speculations.

On the other hand, the fact that the Edwards lime has never been commercially productive in Texas is causing some of the major companies to "go slow" in taking up acreage around Kosse.

The Edwards lime lies in the same relative position as the Tamasopa lime in Mexico. Opinion as to the age of the Edwards lime as compared with the Tamasopa differ, some authorities saying that it is practically the same while others say it is younger. However, the Edwards lime has the same cavernous qualities as the Tamasopa lime and the chance for big wells is considered good, although it does not have the same excellent covering that the Tamasopa lime in Mexico has.

It is not expected that wells of as great a magnitude as those in Mexico will be produced, but it is thought probable that the Edwards lime contains a tremendous quantity of oil, although production no doubt will be spotted, one geologist told The OIL WEEKLY late last week.

"We cannot expect to get as big wells in that section as are found in Mexico, because the production in Mexico is found along structure of far greater magnitude than is found at Kosse," one man said.

The oil in Mexico is found along a fault, which condition also obtains in Mexico. In Mexico oil is found in association with volcanic plugs. But some geologists hold to the theory that these plugs are not necessary to the accumulation of oil.

In Mexico when the lime is tapped, frequently the wells do not show up for a big production, but the big production comes after the lime has been penetrated a few feet. The drill at Kosse had barely penetrated the lime, according to the best information available, when the well came in.

It now appears that the country along the general fault in that section, will come in for a play, and that there is a possibility of getting oil in the Edwards lime wherever there is favorable structure for several counties to the south or southeast.

The idea that bigger wells may be developed at Kosse than have been developed anywhere else in Texas in recent years may prove a "mare's nest" but it has aroused enough interest to cause some serious thought as to its possible effect on the market within the next few months.

It will likely be several months, though, before production on a large scale can be developed around Kosse, due to the depth of the producing formation, and the difficulty of drilling it.

The Humphreys' No. 1 Jones was opened up for a few hours during the past week, and made 3,000 barrels in six hours.

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of 20-24-1 west, going to 4330 feet before slow. Two causes have been responsible. For one, heavy gas pressures from 800 abandoning the hole. The Humphreys Company drilled consistently and recently was rewarded with a 700-barrel well, No. 4 Plumb, the first oil the company has in the area.

To the west and south many dry holes have been drilled. The Prairie Oil and Gas Company drilled to 3285 feet in the southeast corner of section 9-24-1 west on the Murray fee. On the Gravel lease in the southeast corner of the northeast of the southwest quarter of 9-24-1 west, the Transcontinental Oil Company drilled to 2715 feet for a dry hole.

Series of Closures

The Tonkawa structure is one of a series of closures extending northeast by southwest across the northern part of Oklahoma. At the southeastern end is the Garber field. Next comes the Barnes pool, the Billings field, then the East Billings field. Tonkawa is next, after which the Ponca and Mervine fields of Kay County are found.

Like these other pools of North Oklahoma, Tonkawa crude is of fine quality, testing 45 gravity. It is much sought by refiners of the district, who are paying as much as $1 premium. Most of the free oil, however, is bringing 50 cents premium.

There are six buyers in the field, bidding for 12,000 barrels of daily production. The only interstate trunk system buying at Tonkawa is the Ozark Pipe Line Company (Roxana), whose line from Cushing has been completed recently. Other buyers are the Kay County Gas Company, carrier system of the Marland Refining Company; the Producers and Refiners Corporation; the Champlin Refining Company; the Bolene Refining Company and the Moore Refining Company.

In the four sections now producing oil or gas at Tonkawa, there are now 57 drilling wells. These sections are 3, 10, 15 and 16 of township 24, range 1 west of Noble County, and sections 34, township 25, range 1 west of Kay County, which is producing only gas.

These wells are at various stages from rigs to wells near the level of producing sands. At least 10 of them should be completed within a week, unless accidents bring delays. Of the wells drilling, the third well of the Comar on the Carmichael, going to the 2600-foot level, after passing up a well at the 2100-foot horizon is the most interesting. It will determine whether the northern part of the field has two producing sands. The other wells will serve only to increase production, if they prove good.

AW, NOW DAVE, YOU KNOW YOU TOLD US NINE HOLES

Dave Schofield, of Dallas the same Dave whose golf record we printed about two weeks ago, writes in to say it ain't so. Dave says he didn't tell us he made nine holes in a whole afternoon, and his reputation for veracity is being questioned by his friends. And in as much as Dave really has a reputation, we're going to print his letter and not say a word about the score that Dave tried to make us believe he knocked out on the links at Dallas. Here's the letter.

Dallas, Texas, Sept. 13, 1922.

Mr. R. L. Dudley, Manager
The Oil Weekly,
Houston, Texas.
Dear Sir:

I must protest vigorously your statement regarding the golf game played here on Labor Day. Your paper is usually very accurate in reporting the news of oil fields and refineries, and in placing your advertisers' copy correctly, but when it comes to a matter of such grave import to the industry as my golf game, you have slandered me, and have made it appear that I boastingly gave you the account substantially as reported in the September 9th issue of the Oil Weekly. At no time during my conversation with you did I say I made 9 holes during the afternoon; I distinctly said that Dad Folmar, of the Magnolia Petroleum Company, and I went out on the links at 9:00 A. M. and remained until it was too dark to play, I having lost another ball in the ditch while playing the ninth hole. Since your story has been so widely distributed, Dad blames me for having padded the report, because he says there was never any single afternoon long enough in which I could make nine holes if they were placed any further apart than those on a pool table. Unfortunately, others who have played with me know this to be true, so my reputation for veracity will have been destroyed unless you can find some way to correct this false impression.

I have been humiliated enough over your public statement, so I shall not take the matter to the courts for recourse, because I simply could not stand that kind of publicity, but I will request very earnestly that you allow me to furnish you with a certified copy of log of my game when you next have the temerity to print an account of it. Either do that or come up here and play me a game yourself so you can compare the two versions.

Despondently yours,

Dave.

P.S.—You might be glad to know that I have a new set of skin on the neck now, the loss of the other being caused by the elusive golf.

Wiles Area Geology, Ranger District, Texas

Article is prepared by Carroll E. Dobbin of the United States Geological Survey

By Carroll E. Dobbin

The area described in this report is six miles square and lies in the extreme southeastern part of Stephens County, Texas, its east line corresponding approximately with the east boundary of the county and its south line with the south line of the county. (See fig. 1.) As no public-land surveys have been made in this region, the limits of the area were selected arbitrarily. On the map (Pl. VIII) this area is subdivided into 144 squares, which are lettered from A to L, inclusive, from east to west and numbered from 1 to 12, inclusive, from south to north. According to this system H-6, for example, is eight squares west and six squares north from the southeast corner of the area as mapped. The town of Wiles is in square D-4.

Cultural Features

Wiles, on the Texas and Pacific Railway, is the largest settlement in the area. It consists of only a few houses and is used principally as a switch station for unloading equipment for adjacent oil operations. The nearest and most accesible town with good railroad facilities is Strawn, on the same railroad about seven miles to the east. Ranger is about six miles southwest of Wiles. Lacasa, a short distance west of the northwest corner of the area, is not on a railroad but is showing considerable commercial activity because of the oil wells in the vicinity.

The main line of the Texas and Pacific Railway between Fort Worth and El Paso enters the Wiles area a little more than a mile north or the southeast corner, follows the course of the north fork of Palo Pinto Creek and leaves the area one and a half miles east of the southwest corner. The entire area is accessible to vehicles, but several parts have to be reached by indirect routes because of the abundance of canyons with almost vertical walls. The roads are unimproved and in wet weather are nearly impassable, especially the roads constructed of shale and cut up by heavy traffic. Where they pass over the dip slopes of limestones the weathered hummocky surface of the underlying rock made them very rough. Serious washouts are caused by large volumes of water rushing down the narrow canyons after sudden rains. The road from Strawn to Lacasa passes across the northern part of the area and is joined in square G-12 by the road from Wiles, which follows the canyon of Flat Rock Creek. The road between Strawn and Ranger passes across the southeastern part of the area.

Topography

The surface of most of the Wiles area is extremely rough. It is characterized by a series of escarpments which trend in a northeasterly direction and from whose crests the surface slopes gently to the northwest. The streams have cut narrow canyons and reentrants for long distances into the gently dipping strata. The streams flow only during wet weather, but there are always pools in their courses from which water can be obtained for use in drilling and for drinking. The north fork of Palo Pinto Creek and its tributaries, Cottonwood Creek and Flat Rock Creek, make up the principal drainage system of the area. Bills Creek and its tributaries occupy the extreme northeastern part. The land is covered with a thick growth of mesquite and other vegetation of similar types. The lack of water and the roughness of the surface have kept away the prospective farmer.

Field Work

The geology of this area was studied by the writer in April and May, 1919. The detailed structural mapping was done with the telescopic alidade and 15-inch plane table. Locations and elevations were determined by intersection from a number of carefully located primary-control points, whose elevations were checked on several bench marks established in that vicinity by the Coast and Geodetic Survey.[1] V. E. Ekholm acted as assistant in the detailed mapping, and the writer wishes to acknowledge his very efficient service.

STRATIGRAPHY

General Character of Exposed Rocks

The exposed rocks in the Wiles area belong to the Canyon group (Canyon division of Cummins[2] of the Pennsylvanian series and are shown in columnar section in figure 2). They have an aggregate thickness of about 830 feet. The Canyon group in the Wiles area is distinguished from the overlying Cisco group, which is present in the Lacasa area, adjoining the Wiles area on the west, and the underlying Strawn formation, in that it is made up principally of limestone and shale and contains little sandstone. The limestone beds range from a few inches to 50 feet in thickness and are very fossiliferous, yielding a typical Pennsylvanian fauna. Inter-stratified with the limestone are gray and brown shales that contain lenticular or nonpersistent beds of sandstone.

In the north-central Texas region the Canyon group has been divided by Plummer,[3] in ascending order, into the Graford, Brad, and Caddo Creek formations, and these divisions are adopted in this report.

The Graford formation in the Wiles area is about 492 feet thick and is made up largely of gray and brown shales, thin sandstones, and many thin limestones. As originally defined by Plummer[4] the name was applied to the beds between the top of the Palo Pinto limestone and the top of the Adams Branch limestone. In an unpublished manuscript, however, Plummer includes the Palo Pinto limestone in the Graford formation, as its basal member, and that definition has been adopted by the United States Geological Survey. The Adams Branch limestone forms the

[1] U. S. Coast and Geodetic Survey, Fourth general adjustment of the precise-level net in the United States and the resulting standard elevations, pp. 151, 161, 247, 1914.

[2] Cummins, W. F., Geology of northwest Texas: Texas Geol. Survey Second Ann. Rept., for 1889, p. 374, 1891.

[3] Plummer, F. B., and Moore, R. C., Stratigraphy of the Pennsylvanian formations of north-central Texas: Texas Univ. Bull. 2132, 1921.

[4] Plummer, F. B., Am. Assoc. Petroleum Geologists Bull., vol. 3, pp. 132-145, 1919.

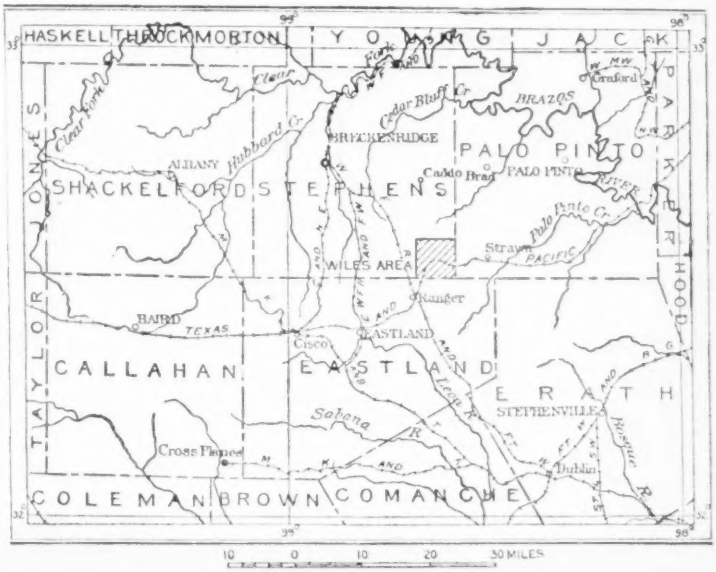

FIGURE 1.—Key map of north-central Texas showing location of Wiles area.

Stabilizing Profits in the Petroleum Industry by Predetermining Conditions

By Joseph E. Pogue,
Consulting Engineer

NEW YORK, N. Y., Sept. 9.—During the past 18 months the problem of stabilizing earnings in the petroleum industry has received wide attention. The general feeling in oil circles has been that the extreme fluctuations characteristic of this industry constituted a serious liability and that concerted effort should be made to avoid the tremendous losses arising from this source. Unfortunately, however, the only noteworthy attempt so far to better conditions—the policy of price stabilization started late last year by the major purchasers of crude petroleum—was abandoned last month with drastic price slashing and must accordingly be adjudged a failure. Thus today the petroleum industry is in a chaotic condition, apparently further from achieving stabilization than at any time in its history. Evidently some new methods of attack are needed.

Perhaps we can see what these new methods must be if we analyze the fundamental causes of this instability. The underlying causes are two in number: fluctuations in price and variations in demand. Both of these conditions are primarily beyond the control of the petroleum industry itself and thus we reach our first conclusion; namely, that the basic cause of instability in the petroleum industry is external and arises from the instability of price and demand in the commodity markets upon which the petroleum industry is dependent.

The losses from these fluctuations in prices and demands are tremendous and exert a disastrous effect upon earnings and profits. For example, one of the largest and most successful refining companies in the East in 1921 showed gross earnings of only $105,000,000 as compared with $169,000,000 in 1920, due to a sudden recession in price and demand; the effect upon net profits was even more destructive, these falling from $10,000,000 in 1920 to a loss of $5,000,000 in 1921. Another very successful company, this one both a producer and a refiner, operating in the Gulf Coast, suffered a decline in gross earnings from 1920 to 1921 of $32,000,000, and the net profits of this company were $19,000,000 less in 1921 than in 1920. These two examples are not exceptional; they represent, on the contrary, two of the best and most conservatively managed oil companies in the United States.

The petroleum industry, in common with all other industries, has devoted no end of effort to increasing its operating efficiency by perfecting its control of internal conditions. The outstanding and untried opportunity lies in the direction of external conditions—conditions that are responsible for the loss of perhaps three dollars for every dollar lost through operating inefficiency. But external conditions, as we have noted, are not primarily subject to control by operating units of an industry. True; but operations can be adjusted so as to fit external conditions, in so far as the latter are not subject to direct control, and this brings us to the crux of the matter: external conditions—that is to say, prices and demands—should be charted ahead with the same care that internal conditions are analyzed and projected, and when this is done adequately the oil business can be kept on the track, even though the track itself cannot be entirely straightened.

Can prices and demands be predetermined scientifically? The answer, with due qualifications, is yes; but not easily nor incidentally. Not until the opportunity existing is recognized and proper effort is accorded it. No, in fact, until the oil industry gets up to date in this respect and does, as a matter of course, what enterprising concerns in many other lines are doing. Then the results, though far from infallible, may be expected to raise substantially the average of accuracy with which plans can be laid and production schedules guided.

The way is open. There is no need for the best companies in the oil business to have suffered the losses they did in 1921. There is no need for the best companies in the oil business to alternate between over-production and under-production, to swing perennially between a feast and a famine. The answer lies in the market place; the way to the answer is through the employment of a new tool—the analysis and use of external conditions, the predetermining of price and demand.

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top member of the formation. The Graford formation is so named on account of its exposures at the town of Graford, Palo Pinto County, Texas.

The Brad formation in this area is about 231 feet thick and is made up of brown and gray shales with thin beds of calcareous sandstone and one prominent bench-forming limestone near the middle of the formation. The Ranger limestone member constitutes the top of the formation, and the base is the top of the Adams Branch limestone member of the underlying Graford formation. As thus defined the Brad formation replaces Plummer's "Ranger formation" as described in the paper just cited, the name Ranger being retained by Mr. Plummer and the United States Geological Survey for the top limestone member of the Brad ("Ranger") formation. The Brad formation is so named on account of its exposures at Brad, Palo Pinto County, Texas.

The Caddo Creek formation in the Wiles area is about 113 feet thick and consists of alternating beds of shale and limestone with thin beds of sandstone. The Home Creek limestone member forms the top of the formation, and the base is the top of the Ranger limestone member of the underlying Brad formation. As thus defined the Caddo Creek formation replaces Plummer's "Eastland formation," the name Eastland having previously been reserved for a Pennsylvanian shale in Tennessee. The Caddo Creek formation is so named on account of its exposures along Caddo Creek, Stephens County, Texas.

At scattered localities in the Wiles area a Tertiary (?) conglomerate lies unconformably on the Pennsylvanian rocks. It is made up of wind-worn and waterworn chert, jasper and vein-quartz pebbles, some of which show very regular polished faces. Patches of this conglomerate can be observed at many localities in the northwestern part of the area.

Key Beds

Palo Pinto limestone.—The Palo Pinto limestone, which is the basal member of the Graford formation, is the lowest bed exposed in the Wiles area. This member was originally called the "Coral limestone" by Drake[5] but was later named by Plummer[6] the Palo Pinto limestone, a name which now stands accepted. The total thickness of this limestone is not exposed in the Wiles area, but a short distance to the east it is about 23 feet thick. The top is well exposed in the creek by the side of the Texas and Pacific Railway in square A-3 and in a creek near the southeast corner of the county. Lithologically it is a fine-grained limestone of uneven texture and presents a rough platy structure on weathering. This limestone is readily recognized in the field, as it forms an escarpment, and in well logs, as it is the first prominent limestone to be encountered above the thick sandstones and shales of the Strawn formation. At short distances to the south and east of this area the Palo Pinto limestone is overlain by a sandstone that in places is 30 feet thick, but in the Wiles area this interval is occupied by thin beds of limestone and shale; the limestone carries an abundance of fossil corals.

Wiles limestone.—The Wiles limestone, which is also a member of the Graford formation, occurs about 136 feet above the Palo Pinto limestone and is so named because of its exposure near the town of Wiles. It has a persistent thickness in this area of 8 to 10 feet and forms a distinct bench along the hillside. Where the overlying rocks have been eroded it forms a minor escarpment and caps a dip slope extending in a northwesterly direction. The Palo Pinto Oil and Gas Co.'s Swenson No. 1 well, in the southwest quarter of square B-4, is on a minor escarpment of this limestone. The limestone is massive, dark gray, and not very fossiliferous. The interval between the Wiles limestone and the Palo Pinto limestone is occupied by shale, thin limestone, and thin sandstone. One thin bed of limestone occurring about 58 feet below the Wiles limestone has a constant thickness of about 30 inches in this area and is thus a valuable horizon marker and datum plane. The rock has a green surface and is very fine grained. Where exposed it shows well-developed joint planes and weathers into blocks that lie on the surface slumped down a little from their original position. This limestone can be observed by the side of the road in square B-4.

Adams Branch limestone.—The Adams Branch limestone, the top member of the Graford formation, was originally described by Drake[7] and was so-called because it is typically exposed on the head of Adams Branch, west of Brownwood, Brown County. In the Wiles area this limestone forms a prominent topographic feature throughout its outcrop, being the cap rock of a continuous escarpment that

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[5]Drake, N. F., Report on the Colorado coal field of Texas: Texas Geol. Survey Fourth Ann. Rept., p. 387, 1892.

[6]Plummer, F. B., Am. Assoc. Petroleum Geologists Bull., vol. 3, pp. 132-145, 1919.

[7]Op. cit., p. 391.

Section of Rock Formations that Crop Out in the Wiles Area

System	Series	Group	Formation and Thickness	Character
Tertiary (?)			0-2 feet	Conglomerate made up of wind-worn and waterworn pebbles of quartzite, chert, jasper, and vein quartz. Conglomerate has a siliceous matrix.
				Unconformity
Carboniferous	Pennsylvanian	Canyon	Caddo Creek formation 113 feet	Home Creek limestone member at top of formation.
				Gray shale, thin sandstone, and thin limestone.
			Brad formation 231 feet	Ranger limestone member at top of formation
				Brown and gray shale with calcareous sandstone and 1 prominent bench-forming limestone near middle of formation
			Graford formation 492 feet	Adams Branch limestone member at top of formation
				Gray, blue and brown shales with many thin limestones and thin sandstones. One prominent calcareous sandstone in upper part of formation. Wiles limestone member about 136 feet above Palo Pinto limestone
				Palo Pinto limestone member at base of formation.

can be followed over a large part of the area. It is about 28 feet thick and about 440 feet above the Palo Pinto limestone. It forms the escarpment near Wiles and retreats for long distances up the creeks west and north of Wiles. In the northeastern part of the area it forms an extensive dip slope with a gentle northwesterly inclination. On the surface it is light gray, massive, hard, of uneven texture, and very fossiliferous. At the top of this limestone there is a zone that differs in color and lithology from the rest of the bed. This zone is about one foot thick and consists of dark-gray to black rock that is heavily pitted on the weathered surface and forms a valuable horizon marker.

At 45 feet below the Adams Branch limestone there is a 5-foot bed of limestone which forms a distinct bench on the face of the escarpment and is persistent throughout the area. On a weathered surface it is dark brown, but on fresh fracture it is dark gray, fine grained and even textured. Locally in the northeastern part of the area this limestone is very fossiliferous, being made up chiefly of species of Myalina. A few feet below this limestone there is another thin bed of limestone about two feet thick which is profusely fossiliferous, with Fusulina and crinoids predominating.

About 60 feet below the Adams Branch limesone occurs the most prominent and persistent sandstone of the Canyon group in this area. It ranges from 45 to 70 feet in thickness and is composed of fine translucent grains of quartz, loosely cemented with a calcareous cement. It is cross-bedded throughout and at the base is conglomeratic. It contains many impressions of plants, most of which are undeterminable. The interval between this sandstone and the Wiles limestone is composed chiefly of gray and brown shales, thin sandstone, and thin limestone. One of the limestones about 73 feet above the Wiles limestone consists largely of Fusulina.

Ranger Limestone.—The Ranger limestone was originally described by Drake[8] and called the "Cherty limestone," because of the frequent occurrence of chert in the bed, but was later named the Ranger limestone by Plummer,[9] because of its occurrence near the town of Ranger. It is about 181 feet above the Adams Branch limestone and forms the top member of the Brad formation of the Canyon group. It maintain a constant thickness of about 50 feet and in the Wiles area is the cap rock of the second high escarpment on the road from Strawn to Lacasa and on the road from Wiles to Lacasa. It is light gray, massive, cherty, even textured, very fossiliferous. In mapping this bed the base and top were used as horizon markers. The top may be recognized by the occurrence of a thin bed of shale immediately above it, and the base is usually in contact with a thin calcareous sandstone. Streams have dissected this limestone, giving rise to long, narrow canyons with vertical walls.

The interval between the Ranger limestone and the Adams Branch limestone is occupied by brown shale, thin sandstone and one prominent limestone. This limestone is about 10 feet thick in the central part of the area but grows thinner toward the northeast and southwest. It makes a persistent and easily recognizable bench below the Ranger limestone scarp. In the southwestern part of the area it has thinned out completely or is concealed by rock debris, as no evidence of its presence could be observed. Along its outcrop there is a remarkable southwesterly diminution in the interval between this bed and the base of the Ranger limestone. In square D-11 this interval is 77 feet, but in square I-6, three and a half miles to the southwest, it is only about 40 feet. About 15 feet above the Ranger limestone there is a thin bed of limestone, separated from the Ranger by shale, which makes a valuable horizon marker. This limestone is brown, flaggy and fossiliferous and makes a persistent and distinct bench a short distance back from the Ranger scarp.

Home Creek limestone.—The Home Creek limestone is the top member of the Caddo Creek formation, the top formation of the Canyon group. It was originally described by Drake[10] and named from the type locality on Home Creek, in Brownwood County, and was later correlated by Plummer[11] with a limestone in the Wiles area. Here this member, as interpreted, consists of alternating limestone and shale about 65 feet in maximum thickness, occurring about 50 feet above the Ranger limestone. It forms a small escarpment that crosses the northwestern part of the area and becomes progressively more prominent to the southwest. The character of this member is indicated by the following section, measured by K. C. Heald and the writer in square K-9:

Section of Home Creek Limestone in Square K-9

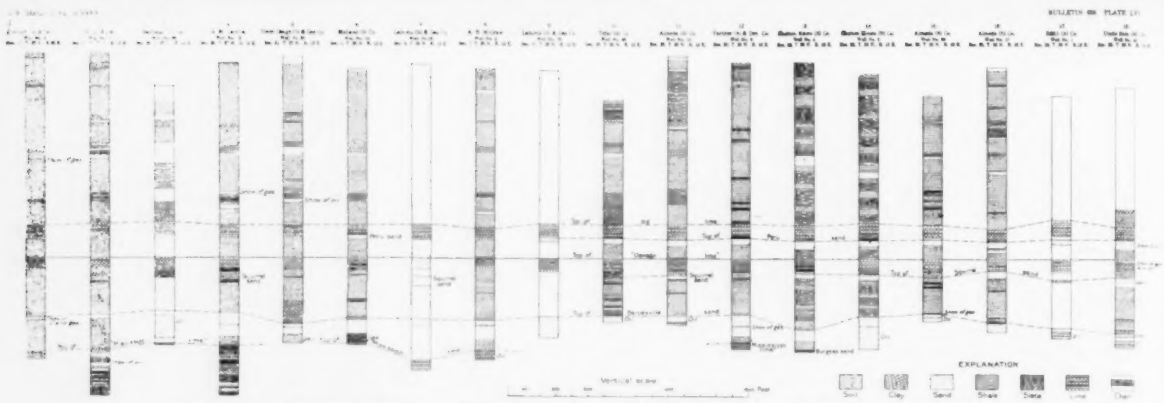
	Feet
Limestone, gray; many fossils on the surface	4
Limestone, smooth, uniform, brown, very hard; breaks into sharp-pointed pieces; fossiliferous; Spirifer predominating	2
Limestone, light brown on fresh fracture; weathers gray; medium hard, lithographic, cherty; top marked with dark brown hematite and limonite	6
Limestone, gray, lithographic, hard; few fossils, many chert nodules	2
Concealed, probably shale	4
Limestone, lithographic, dark, nonfossiliferous	1
Shale, brown	14
Limestone, in two benches; upper	

(Continued on page 88)

[8]Op. cit., p. 395.
[9]Plummer, F. B., op. cit.
[10]Op. cit., p. 398.
[11]Plummer, F. B., and Moore, R. C., op. cit.

Gas Show Is Reported Near Manderson, Wyo.

Basin, Wyo., Sept. 8.—It is reported here that the Manderson well, southeast of Manderson, struck a 2,000,000 cubic foot flow of gas in the Muddy sand. This is the same well which encountered a flow of light oil in the Kimball, but which was continued in the hope of finding a better output in the lower sands. It will be continued to the Greybull, which is expected at approximately 100 feet lower in depth.



WELL LOGS SELECTED TO SHOW UNDERGROUND CONDITIONS ALONG NORTH-SOUTH LINE IN TPS. 26 AND 27 N., R. 12 E., OSAGE COUNTY, OKLA.

Oil and Gas Resources of Osage Reservation

Report describes an area 12 miles long and little less than 3½ miles wide

This report describes an area 12 miles long and a little less than three and a half miles wide, comprising the portions of townships 26 and 27 North, range 12 East, west of the east line of Osage County, Oklahoma.

The field work in this area was begun in the fall of 1917 by G. B. Richardson, assisted by E. F. Lines, and was finished late in 1920 by P. V. Roundy and K. C. Heald, assisted by P. H. Moyer and W. W. Rubey, of the Department of Interior, United States Geological Survey. The area was mapped with telescopic alidade and plane table. Stadia traverses were run and checked by triangulation. A very few elevations were obtained by aneroid barometers.

The present surface in these townships has been cut from an eastward-sloping peneplain. The dissection is still in a youthful stage, for although some of the stream valleys are very well developed, with wide, flat bottoms, the interstream areas are broad and but little modified by stream channels, valley walls are commonly steep, and tributaries to the main valleys are narrow with steep gradients.

The area is drained by Butler Creek and its tributaries in the northern township and by Sand Creek and its tributaries in the southern township. The amount of water carried by these streams varies greatly, and in times of drought their flow fails altogether, but pools, some of them more than a mile long, are cut below the level of ground water in the beds of the main streams, and are a reliable source of supply for drilling operations and for stock.

The Missouri, Kansas and Texas Railway crosses T. 26 N., R. 12 E., from east to west. A siding near the west line of section 17 is a supply point for drilling operations in the immediate vicinity but most of the supplies are hauled from the city of Bartlesville, which is only one mile east of the east line of the area and almost opposite the dividing line between the two townships.

The road net is fairly adequate, but the roads themselves need much improvement. Considerable money has been spent on such improvements, but failure to maintain them commonly results in their speedy destruction.

STRATIGRAPHY

Exposed Rocks

Age and general character.—The rocks that crop out in this area are of middle Pennsylvanian age and correspond approximately to the lower part of the Douglas group, all of the Lansing group, and the upper part of the Kansas City group in the Kansas section. This correlation has been discussed by Goldman[1] in an earlier chapter of this bulletin. They comprise a series of sandstones, shales and thin limestones, aggregating about 720 feet in thickness, as shown graphically in column 4, Plate LV.

Limestone forms only a small part of the geologic section, and shale is but slightly predominant over sandstone. Very few of the beds are good key beds for mapping structure or for correlation owing to lateral lithologic changes and to the lenticularity of the sandstones. The thin limestones in the upper part of the section are particularly unreliable. Individual beds were traced continuously over considerable areas, but only by the most painstaking, time-consuming work. The fossil content of some of the sandstones was particularly helpful in some small areas. Particular types of ripple marks and the direction of ripple marking were in places valuable aids. The tendency of beds to joint in a certain manner, to form a definite type of weathered surface, and to contain certain concretionary types, as well as other local characteristics, were helpful in making short-distance correlations. The associations of beds was constantly used to check determinations, and many closed circuits were run to prove the accuracy of the correlations.

Dewey limestone and overlying beds.—The Dewey limestone, which is the lowermost of the key beds used in mapping these townships, was seen only in a small area, about one miles north of Sand Creek in the eastern part of T. 26 N., R. 12 E. The outcrop at this place is probably separated from the rocks to the northwest by a fault, the surface expression of which is concealed by alluvium. It is a crystalline gray fossiliferous limestone, which at Dewey, Washington County, is over 20 feet thick. Where seen within the area mapped its thickness could not be determined but was probably less than 200 feet thick. The interval of 275 feet between it and the top of the Panther Creek limestone was determined by a measurement about one miles southeast of the area mapped. This determination may be slightly in error because of concealed faults, but it is checked approximately by many of the available well records.

The Dewey limestone helped comparatively little in determining the surface structure.

The interval between the Dewey limestone and the Torpedo sandstone is occupied by nonfissile shale with thin platy beds of hard, fine-grained sandstone that thicken locally. One of these intermediate sandstones is in places as much as 30 feet thick.

Torpedo sandstone. — The Torpedo sandstone[2] is a series of fine-grained, gray to yellowish gray sandstone, ranging in thickness from about 25 to 70 feet. In some sections it contains many thick shale partings; in other sections it is nearly a continuous series of medium thick to massive sandstone beds with one or two prominent shale partings. Usually it makes two very prominent benches. Several of the beds are beautifully ripple marked.

Panther Creek limestone.—The limestone to which the name Panther Creek is herein applied either rests on the Torpedo sandstone or is separated from it by a thin shale. It is named from Panther Creek, in the southwestern part of T. 26 N., R. 12 E., where it is well exposed along the valley rim to the east and to the west. This limestone in T. 26 N., R. 11 E., was called the Stanton (?) limestone by Clark.[3] Later Goldman

(Continued on page 70)

[1] Goldman, M. I., and Robinson, H. M., U. S. Geol. Survey Bull. 686—Y, p. 360, 1920.

[2] Hopkins, O. B., U. S. Geol. Survey Bull. 686—H, p. 76, 1918.

[3] Clark, F. R., U. S. Geol. Survey Bull. 686—I, p. 95, 1918.

Crude Oil Situation One of Watchful Waiting

North Texas producers anticipating another 25 cent reduction. Refined products steady

WICHITA FALLS, TEXAS, Sept. 12.—While no marked changes were visible on the crude oil and refined product market in the North Texas district during the past week, the demand for gasolines from domestic jobbers has remained steady despite the fact that much cooler weather has put in its appearance in various sections of the country. The better grades of motor fuels are beginning to come into prominence, necessitating the refiners cutting more kerosene and naphtha, and it is expected that the output of 56-58 gravity 450 end point gasoline, which has been very active during the summer, will be reduced to a minimum in line with the change in weather.

The crude oil market in the district is experiencing a period of watchful waiting, with the majority of the producers and refiners anticipating one more 25 cent decline in the posted price. While the condition of the crude market in the North Texas district warrants an upward trend in price, such is not expected for some time to come owing to continued overproduction in certain Mid-Continent fields. It is an almost certainty that in the event North Texas crude does receive another slash in price, refiners and many operators will commence stocking up on the low priced product to hold same for better prices.

The reduction in freight rates on petroleum products granted sometime ago by the Interstate Commerce Commission to North Texas refiners on shipments destined for points and states covered by E. B. Boyd's Tariff No. 90-C is to become effective on October 8, according to information given out last week. This territory comprises 11 states that make up part of the so-called Standard of Indiana district, and also extends across the border into Canada. The new rate grants the North Texas refiners a 5½ cents differential over Group 3 in all territory taken in by Boyd's Tariff. When it is placed into effect gasoline can be moved from North Texas to Chicago for six-tenths of a cent per gallon cheaper, and only only four-tenths of a cent per gallon above the rate enjoyed by Group 3 refiners. Fuel oil and other refined products are included in the new tariff.

Establishment of this new rate will open up a wide territory that has been heretofore impossible to enter by the North Texas refiners on both motor fuels and fuel oils. The latter product is expected to strengthen in price slightly for the output of the North Texas refiners has been marketed in the Southwest almost exclusively, except when the coal strike became a factor in the situation within the past two months.

The tank car situation in the North Texas district during the past week was again giving the shippers of refined products considerable worry after experiencing an improvement the week previous. When tankers began rolling in during the first week in September in greater numbers, the refiners grew bolder in making deliveries to distant points and accepted orders for fuel thinking that their empties would continue to return promptly. Loaded cars moving to points in the North and East are requiring from 10 days to a month to reach their destination while the return journey is even longer.

Continued strength being maintained by the fuel market in Group 3 territory is having effect on the North Texas market, and firmer prices were being quoted this week. Inquiries for large shipments to the North and East are reported as being plentiful, while the demand within the state is holding up. Wichita Falls refiners were receiving from 95 cents to $1.05 per barrel in shippers cars for their fuel, and Fort Worth plant owners were quoting from 15 to 20 cents higher.

Domestic jobbers are showing more interest in navy and 60-62 gravity 400 end point gasoline early this week, while some were shopping around for small quantities of 390 end point motor fuel. New navy was offered at 13¾ to 14 cents per gallon, while 60-62 could be had for 16 cents more or less. Export buyers are still in

Dallas, Texas, Sept. 18.—The Magnolia Petroleum Company's surplus steel storage facilities in the Mexia field are being utilized to store Ranger crude, and at the same time give relief to the crowded storage situation in the Ranger district. The company has transported via pipe line approximately 440,000 barrels from Ranger to Mexia, and early this month announced that eight 55's had been filled. The Ranger crude is in exceptionally big demand by the major companies owing to its lubricating qualities and yield of bright colored cylinder stocks. The Magnolia Company is storing this crude for future use.

AVERAGE DAILY PRODUCTION FOR ALL UNITED STATES FIELDS
(Stated in Barrels)

This table is carried each week by The OIL WEEKLY, and shows daily production average for each state or section. Figures for Texas, Oklahoma, Kansas, Louisiana and Arkansas are compiled by The OIL WEEKLY, while estimates for the Mountain States, Eastern States and California are furnished by the American Petroleum Institute.

Week Ending—	West Texas	North Texas	Texas Coastal	Total Texas	Kansas	Oklahoma	Louisiana	Eastern States	Wyoming-Montana	California	Arkansas	U. S. Total
Jan. 7, 1922....	199,220	66,410	108,145	373,775	88,050	311,850	94,475	115,500	59,625	320,000	45,530	1,406,805
Feb. 4	206,225	64,695	108,600	383,230	83,800	323,465	103,195	115,500	58,000	325,000	37,560	1,426,040
March 4	218,275	59,855	104,670	382,800	82,450	342,400	126,805	110,000	57,800	310,000	32,515	1,444,770
April 1	197,170	59,620	101,185	357,975	81,900	366,900	128,530	114,500	71,150	325,000	34,650	1,480,605
April 8	176,495	61,400	108,815	346,710	82,400	367,500	108,095	115,500	70,900	325,000	39,225	1,454,830
April 15	159,720	58,290	110,480	328,490	82,300	368,710	98,700	115,000	72,150	330,000	35,700	1,431,280
April 22	155,305	59,950	111,645	326,900	81,600	365,600	88,455	118,000	69,050	330,000	38,410	1,418,015
April 29	160,535	58,695	109,395	328,625	81,900	365,000	89,420	118,500	71,900	330,000	39,110	1,424,455
May 6	168,720	62,270	113,350	344,340	85,200	391,500	87,725	119,000	74,850	330,000	37,700	1,470,315
May 13	163,805	63,130	115,290	342,225	86,500	399,500	90,740	118,500	74,400	340,000	37,115	1,488,980
May 20	159,620	61,690	108,760	330,070	86,500	398,450	94,865	119,000	72,000	340,000	35,160	1,476,045
May 27	163,935	63,165	110,560	337,660	85,300	399,100	91,645	112,000	76,750	340,000	36,000	1,479,455
June 3	155,900	62,445	113,855	332,200	86,100	399,400	98,360	111,500	79,000	350,000	37,395	1,493,955
June 10	149,115	66,190	108,045	323,350	89,000	405,500	95,605	112,000	76,900	360,000	34,200	1,496,555
June 17	147,430	64,545	115,455	327,430	90,400	405,900	100,397	112,500	82,900	350,000	34,640	1,504,207
June 24	141,870	64,490	109,235	315,500	91,500	417,500	94,860	111,000	83,600	355,000	32,340	1,501,395
July 1	147,305	63,020	107,100	317,425	92,000	415,600	94,795	115,000	83,850	355,000	32,800	1,506,470
July 8	143,180	65,870	105,300	314,350	91,700	420,200	98,230	116,000	81,950	360,000	33,460	1,515,690
July 15	148,035	70,125	105,400	323,560	91,800	419,800	97,645	116,500	92,590	370,000	31,250	1,543,145
July 22	152,585	68,630	100,965	322,180	90,650	425,960	98,340	117,000	84,450	375,000	31,000	1,544,580
July 29	155,980	67,625	106,990	330,595	90,450	426,200	98,045	120,000	79,250	375,000	31,040	1,550,580
Aug. 5	150,230	69,055	105,805	325,090	91,675	420,250	94,350	120,500	85,200	375,000	32,105	1,544,170
Aug. 12	150,790	69,920	103,930	324,640	89,500	427,850	99,475	121,000	86,100	375,000	31,400	1,554,965
Aug. 19	144,015	70,445	106,855	321,315	89,100	412,200	97,330	121,500	82,350	375,000	29,735	1,528,530
Aug. 26	142,075	72,200	107,275	321,550	89,700	416,800	100,590	120,000	82,100	375,000	30,105	1,535,845
Sept. 2	139,120	70,640	108,290	318,050	88,300	421,900	103,415	117,000	81,000	380,000	31,530	1,541,195
Sept. 9	139,778	71,715	104,680	316,173	91,000	420,600	101,095	113,000	82,850	385,000	30,335	1,540,053

NOTE—Mexia production included in West Texas.

The above picture of the old Cost gasser, completed some years ago on the William Voight lease in Gonzales County, Texas, was snapped when everything was covered with ice. The Wade Drilling Company of Mexia has arranged to use gas from this well for fuel on a deep test to be started in Gonzales County the middle of this month. Joe Dunning, representative of the company, is shipping out a small rig from Muldoon to be used in cleaning out the old gasser and putting it in shape for use. A 4-inch gate valve has already been put on it to control the gas when open. A large rig has been shipped from Mexia to drill the deep test.

Refined Market in Group Three Is Very Sluggish

Tulsa, Okla., Sept. 13.—Petroleum products have been through a quiet week selling sluggishly and at prices about in line with those for the previous week. Gasoline demand has been good from some sections but there has been nothing to encourage hope for an early betterment of prices on this product. All buying seems to have been on current demands. Quantities bought have been for quick consumption, as large orders are not coming through. New navy gasoline is selling about 14½ cents f. o. b. shipping points in Group 3 territory. As was the case last week, kerosene is still moving freely but there has been no further jump in price. Quotations are from 5¼ to 8½ cents; fuel oil at $1.15 is 5 cents below the figure of last week. Sales are steady. Gas oil is holding firm.

the market for all three of the above motor fuels, but are about half-cent under the domestic prices on their offers to the refiners.

The kerosene market has proved somewhat of a surprise within the past two weeks by developing an unusually heavy demand from both export and domestic buyers. Export purchases announced last week added strength to the market considerably, and early this week refiners were asking in excess of four cents per gallon for their 41-43 product. Stocks have been depleted, and only a few of the independent refiners are turning out any great amount of this product. The others are hesitating on making use of their meager supply of clean tank cars to deliver kerosene as long as these cars are needed to ship more profitable products such as gasolines.

To Drill Deep Test Near Green's Bayou

Houston, Texas, Sept. 14.—J. C. Stribling et al, near Green's Bayou in Harris County, is rigging up its Seaureau 1.

This location is on the Seaureau survey, 1368 feet south of Market Street road, 1500 feet east of the Galena-Signal Company and 2200 feet west of Green's Bayou. This well is equipped with two 45-horse power boilers and a 112-foot derrick, the rig is of a very heavy type, capable of going 5000 feet if necessary.

This company has 1000 acres under lease here and R. A. Harvey and J. A. Rush will be in charge of drilling operations and "Bill" Howard, well known in gulf coast fields, will be the day driller. Both Mr. Harvey and Mr. Rush have operated at Orange for several years for Mr. Stribling.

Market Quotations

A fair list of prices on refined petroleum products in the North Texas district, f. o. b. shipping point in tank car lots, follows:

Gasoline, SR, 56-58, 450 e. p.	12¾	13
Gasoline, SR, 58-60, 437 e. p.	13¾	14
Gasoline, SR, 60-62, 400 e. p.	15¾	16¼
Gasoline, SR, 64-66, 390 e. p.	17	17½
Naphtha, 50-52, 450 e. p.	10	10½
Natural Gasoline (Casinghead) 80-88	15½	16
Natural Gasoline (Absorption) 70-74	16½	17¼
Kerosene, WW, 41-43	4	4½
Distillates, 36-38	2¾	3
Gas Oil, dark or straw, 32-36	2½	2¾
Fuel Oil (Wichita Falls)	.95	1.05
Fuel Oil (Fort Worth)	1.15	1.25

Refined Prices in Gulf Coast Remain Unchanged

Houston, Texas, Sept. 13.—The local market for lubricants refined from Gulf Coast crude oils remains firm and unchanged, with reports of stronger tendencies in the crude market adding strength to the price.

Business is being booked in satisfactory volume from all consuming quarters.

Local quotations for the mid-week, refinery were about as follows:

Color	Viscosity @ 100° F.		Price per gal. High	Low
—2	70	Pale Oil	6	5.5
2	100	Pale Oil	7	6
2½	150	Pale Oil	11	10
3	200	Pale Oil	13	12
3½	300	Pale Oil	17	16
4	750	Pale Oil	30	29
5	200	Red Oil	12	10.5
5	300	Red Oil	16	14
6	500	Red Dil	20	17
Zero	Black		6	5
Gas Oil			5	4
Fuel Oil (barrel)			$1.50	$1.60

Houston, Texas, Sept. 14.—A well is being drilled on West Galveston Island by Marsene Johnson of Galveston. This well has a 112-foot derrick and is equipped with a heavy rig. It is located on section 12, directly north of the beach.

Pat. M. Armstrong will be in charge of the drilling.

Chester Washburne, well known geologist, was in Houston during the past week.

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

	Atlantic Ports						Gulf Coast Ports					
Week Ending	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total at all ports
July 29	54,000	230,000	806,000	91,139	252,000	1,433,139	241,000	364,000	587,000	22,000	1,214,222	2,647,361
August 5	110,000	204,000	476,000	185,000	282,000	1,257,000	98,000	104,000	732,000	.....	934,000	2,191,000
August 12	170,000	182,745	495,000	161,400	276,000	1,285,145	304,000	392,667	277,000	.....	973,667	2,258,812
August 19	140,000	126,000	889,000	140,466	279,000	1,574,466	271,000	118,523	324,000	.....	713,523	2,287,989
August 26	297,000	216,000	404,000	175,000	454,000	1,546,000	314,000	246,000	261,000	157,000	978,000	2,524,000
Sept. 2	225,000	297,000	357,000	88,420	349,201	1,085,621	112,000	131,000	200,000	65,000	508,000	1,593,621

NOTE—Figures compiled by American Petroleum Institute.

Crude Oil Prices

	Sept. 14 1922	Sept. 13 1921
LOUISIANA		
Caddo 38 gravity and above	$1.25	$1.25
Caddo 35 to 37.9 gravity	1.15	1.15
Caddo 32 to 34.9 gravity	1.10	1.10
Caddo 32 gravity and below	**.75**	**.60**
Homer 35 gravity and above	1.25	1.00
Homer 33 to 34.9 gravity	1.15	...
Homer 31 to 32.9 gravity	1.10	...
Homer 31 gravity and below	.75	.50
Haynesville:		
33 gravity and above	1.10	.75
32.9 gravity and below	1.00	.50
Bull Bayou:		
38 gravity and above	1.15	.90
35 to 37.9 gravity	1.05	...
32 to 34.9 gravity	1.00	...
De Soto Crude	1.25	1.15
Crichton crude	1.00	.75
Bellevue (Bossier Parish)	.75	...
Jennings crude	1.25	.80
Vinton	1.25	.80
Edgerly crude	1.25	.80
Cabel	1.86	$1.11
Pennsylvania	3.00	2.25
Ragland	1.00	.60
Corning	1.75	1.20
North Lima	1.98	1.58
South Lima	1.98	1.58
Wooster	2.10	1.80
Somerset, light	1.90	1.00
Somerset, heavy	1.65	.90
Illinois	1.77	1.27
Indiana	1.78	1.38
Plymouth	1.15	.65
Princeton	1.77	1.27
Waterloo	1.25	.75
TEXAS		
N. Texas (except Corsicana)	1.50	1.00
Corsicana, light	1.00	.85
Corsicana, heavy	.65	.50
Mexia	1.25	...
Currie (40 grav. and better)	1.50	...
Gulf Coast (ex. Pierce Junction, Blue Ridge and Hull)	1.25	.80
Nacogdoches	3.20	...
Pierce Junction, Grade A	1.25	...
Pierce Junction, Grade B	.80	...
Hull, Grade A	1.25	...
Hull, Grade B	.80	...
Blue Ridge	.80	..

CALIFORNIA

(Crude oil prices at the well)

San Joaquin Valley and Whittier-Fullerton fields

	1922	1921
14 to 19.9 gravity	.60	1.10
20 to 20.9 gravity	.63	1.10
21 to 21.9 gravity	.67	1.20
22 to 23.9 gravity	.73	1.25
23 to 23.9 gravity	.80	1.31
24 to 24.9 gravity	.88	1.38
25 to 25.9 gravity	.96	1.48
26 to 26.9 gravity	1.05	1.55
and for each increase in gravity of one full degree above 26, up to and inclusive of 34.9 gravity, ten cents a barrel additional.		
35 gravity and above	1.85	2.45
WYOMING		
Elk Basin	1.20	1.15
Grass Creek	1.20	1.15
Rock Creek	.80	.75
Lance Creek	1.20	1.10
Mule Creek	.60	.70
Big Muddy	.70	.65
Salt Creek	.70	...
Osage	1.20	...
Cat Creek (Montana)	1.20	...
Landers	.37½	...
ARKANSAS		
El Dorado:		
33 gravity and above	1.25	.60
Below 33 gravity	1.00	.50
OKLAHOMA		
Healdton, Walters, Beaver	.75	.75
Cement	1.00	.75
All other fields	1.25	1.00
38 gravity and above (Gulf only)	1.50	...
KANSAS		
All fields	1.25	1.00
KENTUCKY		
Western (Indiana Ref. Co.)	1.65	.90
CANADIAN CRUDE		
*Petrolia	2.38	1.98
*Oil Springs	2.45	...

*Plus 52½ cents bounty.

Several Additions to Second Quarter Gross Production Reports for Texas

AUSTIN, TEXAS, Sept. 13.—A supplement report to the State's Comptroller's office for gross production taxes shows sixteen additional companies. The Humphreys Oil Company which had failed to make a report as to the value of their oil when the first figures compiled has sent in a return giving the total valuation at $2,911,801. The company produced 3,411,067 barrels of oil during the third quarter which was shown in the detailed report carried in The OIL WEEKLY several weeks back.

Those companies whose reports had not been filed when the previous figures were used, showing the production for the second quarter of 1922 together with the value of the oil, follows:

Company and address—	Barrels	Value
Altex Petroleum Company, New York, N. Y.	2503.37	5632.54
Clarence R. Backus, Fort Worth	2699.58	6074.05
W. L. Benson & Co., Robinson, Ill.	6743.23	15172.27
Breck-Tex Crude Oil Syndicate, Fort Worth	546.15	1228.86
Chesapeake Oil and Gas Company, Baltimore, Md.	3084.18	6939.40
Sidney Colcord, Oklahoma City, Okla.	581.29	1307.90
T. S. Croslin, San Antonio	4146.73	9330.14
Humphreys Oil Company, Mexia	2911801.40	3411067.64
La Salle Oil Company, San Antonio	1459.11	2995.28
Mann & Reed, Graham	9125.56	20532.51
Omilak Oil Company, San Antonio	644.64	1352.76
Paris Wichita Oil Company, Paris	278.07	599.44
Turnbow Oil Corporation, Houston	15627.55	23441.33
L. J. Wardlaw, Fort Worth	3259.27	4801.81
U. S. Petroleum Corp., Jno. F. Czarnik, Pres., Sipe Springs	766.23	1724.02

STANDARD SEAMLESS STEEL TUBING for WORKING BARRELS

Samples and Prices Submitted on Request

DISTRIBUTORS:
Republic Supply Co.
Continental Supply Co.
Frick-Reid Supply Co.

California:
Associated Supply Co.
Republic Supply Co.

Standard Seamless Tube Co.
Pittsburgh, Pa.

Producers of Salt Creek Field Hold Meeting to Curtail Operations

DENVER, COLO., Sept. 7.—At a series of meetings held in Denver during the week, of the producers in the Salt Creek field, at which it is estimated 90 per cent of the acreage was represented, an endeavor was made to work out some plan whereby drilling in that field could be reduced to the minimum to prevent overproduction.

Representatives of the Carter, Inland, Ohio, E. T. Williams, Mutual, Midwest, Wyoming Associated, Mountain and Gulf, Kinney-Coastal, Producers and Refiners, Fensland, Glenrock and others, were present and all appeared to be of the opinion that an equitable plan could be worked out and all were favorable to suggestions made.

It was agreed that it was to the best interests of all concerned that all necessary drilling be eliminated, which would leave only the wells required to hold the leases and the necessary off-sets for production, thus holding expenses of operation which cannot be handled by the present pipe line facilities.

Each company operating in the field was asked to make a map of its holdings, showing the wells drilled and drilling, and carrying such other information as would be necessary to make a decision as to the number of wells necessary to be drilled. A meeting at which every lease holder in the field is asked to have a representative present is called for Casper on September 20, at which time these maps will be assembled, and it is hoped that a plan agreeable to all concerned can be adopted.

It is hoped by those actively interested that the meeting may result in the suspension of drilling new wells in the field, at least through the winter months, and that by spring a greater portion of the production now available can be handled by those purchasing in the field, which will tend to raise prices for the crude.

Large Absorption Plant Building Near Casper

Casper, Wyo., Sept. 9.—Work is now going forward at full speed on construction of the absorption plant of Producers and Refiners Corporation, which is being built on an 80-acre tract adjoining the terminal of the Western Pipe Line Company west of this city.

The offices and warehouse buildings are completed and foundations are now being poured for the plant. As soon as these are completed, the installation of equipment and machinery will be started.

The Hope Engineering Company, which has the contract, has fabricated practically all of the machinery at its plant at Mt. Vernon, Ohio, and most of this is now on the ground.

The plant when completed will have a capacity of 40,000,000 cubic feet of gas per day. It will separate gasoline from the gas which is now being piped from the Carbon County fields for use at the local refineries.

TWO UNUSUALLY GOOD WELLS AT SALT CREEK

Casper, Wyo., Sept. 9.—In the Salt Creek field there were two good wells brought in during the week. The Fensland Oil Company's No. 1 Farrell in Section 19, at 2575 feet, is good for 700 barrels. The Wyoming Oil Fields' No. 33-A, section 19, came in at 2190 feet with a production of 1200 barrels.

The Fensland Company has two more tests drilling which should be completions shortly; the company's No. 2 Bywater, section 20-39-78, is while being drilled already making considerable oil.

Houston, Texas, Sept. 14.—Arthur Knapp, petroleum engineer with the United Gas Improvement Company, Philadelphia, is in Houston for a few days. Mr. Knapp has been making some very interesting experiments on the penetrating qualities of drill mud in rotary drilling.

New Fields Promised By Wildcats in France

Paris, France, Sept. 9.—The regions near Arcachon Bay and Bordeaux in France have come to the front as prospective oil producing districts and recent showings of test wells there are responsible for a general belief that oil fields probably as rich as those of Baku in Russia will be opened in the near future.

The district is being prospected with much secrecy by the French government and very little is known as to the formations encountered in drilling wells or if any of these wells have made showings of oil. However, it is understood that recent wells have made heavy flows of highly inflammable gas, an analysis of which showed 81 per cent methane or marsh gas with coefficient of 5,600 calories.

This compares with the gas found in the producing wells in the famous Baku fields.

Production of crude oil in France since the first part of 1921 has shown a material increase and the output for the first three months of 1922 is estimated to have been 52 per cent greater than the corresponding period of 1921. The production by months for the first quarter of 1922 follows:

January	*5,060
Feburary	3,667
March	5,748
Total	14,475

*Figures in metric tons.

MIDWEST ABANDONS WILDCAT TEST AT HILL CREEK, UTAH

Salt Lake City, Utah, Sept. 11.—According to late reports received here the Mirwest Refining Company has abandoned its test on Hill Creek in the Uintah Basin district. This section has been considered one of the most promising in the State and the failure of the Midwest well is far from encouraging.

Districts which have been under development for sometime, namely Cainsville and San Rafael Swell are showing a letting up in prospecting following the abandonment of several wells by the Ohio Oil Company recently.

J. W. Bostick of Tulsa, general manager of the Kansas and Gulf Oil Corporation is spending the week in Houston.

"As rewards for your advertising efforts and more particularly for the excellent paper you are publishing, we are enclosing check for $7.00, same being in payment for annual subscriptions to the following gentlemen who are directors of the Anzac Oil Association and Monroe Production Company."

Associated Oil Will Develop Tract In Cold Bay Peninsula Area, Alaska

CASPER, WYO., Sept. 9.—A very favorable deal has been negotiated by the Alaska Oil Company, control of which is owned by the New York Oil Company, whereby leases on 5,120 acres in the Cold Bay Peninsula district of Alaska will be developed by the Associated Oil Company of California.

In addition to a bonus of $65,000 already paid, the lease calls for payment of $100,000 when oil is discovered in commercial quantities sufficient to warrant a continuation of development, and a second $100,000 to be paid from production, when the oil is marketed. The lease also carries a graduated royalty averaging 12½ per cent on the entire property.

Material and equipment is now being shipped from Seattle, but the development will not be started before next spring owing to the frigid climate of that district during the winter months.

The Alaska Company was organized about two years ago by the late Frank G. Curtis and associates for the purpose of exploring and developing lands in the northern country, and considerable acreage which was favorably situated geologically was secured by the corporation. No active development has ever been started on the property but with the closing of this contract, the Associated is obligated to give the land a thorough test. The company still retains considerable acreage adjoining, and negotiations are now pending for the development of the land.

Numbered among the stockholders of the Alaska company who are well-known locally are: John McFadyen, H. M. Blackmer, B. B. Brooks, Homer Lamb, Pat Sullivan, C. B. Richardson, Carl Pforzheimer, W. S. Kimball and C. B. Manbeck.

MOUNTAIN STATES
WYOMING, MONTANA, COLORADO

Rushing for Second Sand at Cat Creek

Winnett, Mont., Sept. 8.—Drilling is active in the Cat Creek field with all interests attempting to pierce the second sand for the gusher production.

The Hanson Petroleum Company has spudded in on Section 11-15-29 and is rushing to the pay. As this well is on the famous section 11, there is no doubt expressed as to its productivity when completed.

The Frantz Corporation is rigging up for its No. 2 on Section 26, and as the company already has a producer near this it is almost a certainty that it will be a valuable oiler.

The O'Neil interest and the Northwest Petroleum Company have combined on a project to drill five new wells in the field, all of which will be carried to the second sand and material is now being hauled in for that purpose. Work is now under way to deepen the Tip O'Neil well on Section 16, which was formerly rated as a good first sand producer, but it will be carried to the gusher production.

After a long series of accidents, indications are now favorable for the early completion of the Barnsdall-Foster deep test in the Big Lake structure, 30 miles northwest of Billings.

Tools which dropped to the bottom of the 3780-foot hole resulting in a long and tedious fishing job, have at last been gripped and with the lifting of these, drilling will be continued.

The tools were dropped just as the top of the sand was reached and oil was forcing itself up through the cavings and around the tools, indicating that production might be expected in quantities and keeping the excitement at high tension.

The California Company's well on the same structure is reported as being atop the Eagle sand at 1000 feet where a showing of oil and gas has been encountered and the penetration of this strata may prove it to be oil bearing.

Salt Creek Well Made 920 Barrels in Day

Casper, Wyo., Sept. 9.—A new well is being drilled in by the Inland Oil and Refining Company in Salt Creek. The second Wall Creek was found in Black No. 6, on the northeast quarter of section 30-40-78, at 2294 feet, and with the bit 22 feet in the sand the well has produced 920 barrels during the last 24 hours. Deeper drilling insures an excellent producer at this location.

Black No. 5 on the same quarter is mudding six and five-eighths inch casing at 2324 feet.

Shoup No. 2 on the southeast quarter of section 29-40-78 is shut down for cement to set at 2492 feet.

The rig was burned at the Geary Dome test on Wednesday afternoon with the hole at 4610 feet. This occurred while a bit was being dressed, and it is stated by members of the crew that there was no gas present at the time, the only conclusion being that the high wind fanned the flames in the forge until the timbers caught. According to reports, there has been no showing of either oil or gas in the hole so far and there has been no announcement from an official source as to whether a new rig will be built and the hole continued, or whether the location is to be abandoned.

Three Completions Draw Attention to Kevin-Sunburst Area, Montana

GREAT FALLS, MONT., Sept. 8.—Three completions are reported this week from the Kevin-Sunburst district, and the whole territory has a more hopeful aspect. On section 18, the Gladys Belle Oil Company is being estimated at 500 barrels, after oil having been found at a depth of 1634 feet. It tests 32° Baume, and is an oil similar to that of the Sunburst discovery well. Pay is from the Ellis sands.

The California Oil Company brought in the other two wells. No. 1 Morton came in at 1377 feet and is now producing 600 barrels and will probably settle down to a production of 200 or 300 barrels. The company's No. 1 Able, on section 26, is bailing at 1450 feet. There is a showing for a good well although there is some water in the oil.

Resulting from these completions, it is expected that a considerable number of new tests will be started, since the proven acreage is extended. The Gladys-Belle extended the proven territory several miles southwest and the California is responsible for the proving of much territory around Kevin.

By September 15 the pipe line of the Illinois Pipe Line Company from Sunburst to the loading racks a mile south, will be completed and ready for oil. At present half of the work is finished on this line, which is to be a four-inch carrier.

There is a report to the effect that the Standard Oil Company of California has purchased a 640-acre tract in the Kevin-Sunburst field at $225,000. Part of this territory is adjoining that on which the Gladys-Belle brought in its producer on section 18-35-2w.

In an offset to the discovery well which was ruined by deeper drilling, the Gordon Campbell-Kevin Syndicate, No. 2 test, known as the No. 1 Lincoln, has struck a flow of about 3,000,000 cubic feet of gas. This location is on section 10-35-3w, and drilling has progressed to 1035 feet; oil is expected at 1780 feet.

BIG GASSER TAPPED IN POISON SPIDER DISTRICT

Casper, Wyo., Sept. 9.—A gasser which recorded a flow of 47,000,000 cubic feet on the gauge was uncorked by the Fargo Oil Company on the northwest quarter of the southeast quarter of section 3-33-83, being the largest in the Poison Spider district in a test which was being drilled to the Embar sand. The flow, which was encountered at 1360 feet, has been killed and the hole is being continued. This well proves several hundred acres additional to the field to be productive in this sand and greatly enhances the value of the property in that vicinity.

It is apparent that the flow is a freak, and presumed to be in a fault, as No. 16, which is 150 feet distant, made only 1,500,000 feet from the same horizon.

Work is progressing satisfactorily with the compression plant being built in the field by the Cooper Manufacturing Company for the Fargo, and it is believed that unless delays are occasioned in the shipping of material, it will be completed and ready for operation on November 1.

Casper, Wyo., Sept. 9.—Producers and Refiners Corporation has completed its No. 8 on section 30-40-78, Salt Creek. This well, which came in with a flow estimated at 800 barrels, was drilled into the sand at 2512 feet. A derrick has been completed and is being rigged up on section 6-39-78 and is being planned to spud in at this location tomorrow.

Finds Stray Oil Sand In Teapot Dome Test

Casper, Wyo. Sept. 9.—With the striking of oil in a stray sand, the Teapot Dome shows real evidences of being oil-bearing by the Mammoth Oil Company, and if there has ever been any doubt expressed as to the production of this structure, that doubt is now disappearing.

The sand was cut at 890 feet on the southeast corner of the southwest quarter of section 27-39-78, the location being well to the east side of the dome and about one-fourth of the distance down the structure from the north end.

Several hundred feet of oil is standing in the hole and it is thought by Mammoth officials that with further work, a good commercial producer could be made of the well. This will not be done, however, at the present time, owing to the fact that there are no facilities in the field for handling the output. With the completion of tanks which are now under construction, connections will be made, and at that time it will be found out just what this well will do. In any event, it is likely that the hole will be carried to the second Wall Creek sand as was originally planned, and should the showings be sufficient, the stray will be developed by other wells drilled at that point.

Casper, Wyo., Sept. 9.—The past week has been a light one for the Midwest with only two completions recorded in Salt Creek.

No. 36-A on the southwest quarter of section 7-39-78, which is a Salt Creek Consolidated location, was brought in at 2432 feet; it will be a pumper.

Wyoming Oil Fields well No. 33-A on section 19-40-78, was drilled into the second Wall Creek sand at 2190 feet and is rated at 1200 barrels. The well will be shut in.

OKLAHOMA PRODUCTION.

Tulsa, Okla., Sept. 13.—Production in the fields of Oklahoma showed the following daily average for the past week:

	Barrels
Burbank	70,000
Other Osage	41,500
Creek County-Bristow, Kellyville, Slick and Continental	66,150
Okfuskee County-Kingwood, Lyons and Okemah	23,800
Cushing	30,000
Hewitt	29,500
Healdton	19,550
Okmulgee District	19,750
Duncan and Walters	17,900
Tonkawa	12,000
Other fields	90,450
Total	420,600
Last week	421,900

SOUTH OKLAHOMA COMPLETIONS.

Company, well, location	Initial Production bbls.	Depth
Carter County—		
Carter Oil Co. Woodruff 24 SEc SW NW 15-4s-2w	75	2390
Cotton Belt Pet. Co. Sparks 2 SEc SW 30-2s-2w	200	2360
Magnolia Pet. Co. Woodruff 19 NEc SW SW 15-4s-2w	35	2055
Williams 1 C SE NE NW	*	2410
Stephens County—		
Best of All Oil Co. Armstrong 2 SEc 24-1s-9w	¶17	2000
Gypsy Oil Co. Breclenthal 3 SEc NE SE 19-1s-8w	*	2825
Magnolia Pet. Co. Young 7 NWc SW SE SW 29-1n-8w	10	2155
Old Colony Oil Co. Kagog 5 SEc NW NW SW 34-1s-8w	10	2180
Caddo County—		
Magnolia Pet. Co. DamDa 1 NEc SE 29-6n-10w	*	3525
Gregory 3 SEc SW SW 31-6n-9w	25	1600
Waldo Drilling Co. McKenna 6 SWc SE SE SE 11-5n-9w	35	2360
Garvin County—		
Magnolia Pet. Co. Jones 6 SEc NW SE 14-1n-3w	10	1350
Mauldin 7 SEc NW NW NW 15-1n-3w	50	1470
Comanche County—		
Schultz et al Keburg 1 SEc NE SW NE 14-1n-9w	*	2350

NORTH OKLAHOMA COMPLETIONS.

Company, well, location	Initial Production bbls.	Depth
Osage County—		
Atlantic Oil Prod. Co. 5 SEc NE SE SW 1-22-9	*	2140
Carter Oil Co. 16 C NW SE SE 31-27-6	200	2910
Choctaw Oil Co. NW SW NW NE 20-24-9	200	2270
Continental Oil Co. 6 SEc NE 27-24-9	50	2140
Cosden Oil & Gas Co. 9 SW NW NW 8-26-6	100	2930
Devonian Oil Co. 16 SE NW SE NW 5-26-6	100	2925
Douglas Oil Co. 12 SWc NE 32-24-8	25	800
I. T. I. O. 36 SWc NE SW 32-27-12	*	1540
Kewanee Oil Co. 8 SEc SW SE NE 5-22-11	25	1870
Midland Oil Co. 2 C SE NW NW 15-26-6	200	2910
O. P. & R. 150 C E½ SW 5-23-8	25	2440
151 SWc SE 16-23-8	30	1710
Phillips & Skelly 4 NEc NE NE 7-26-6	650	2860
Producers & Refiners Corp. 5 C NE SE NE 16-26-6	250	2935
Sinclair Oil & Gas Co. 10 C NE NW NW 33-27-6	500	2960
Joe Stine 2 SEc SW SE SE 9-21-12	25	1340
Tidal Osage Oil Co. 1 NWc SW 26-24-9	25	2140
Noble County—		
Comar Oil Co. See 10 C W W½ NW 15-24-1w	1000	2640
Southwestern Pet. Co. Murray 14 C S L SW SE SW 10-24-1w	2200	2635
White Eagle O. & R. Co. Novotney 2 SWc SE 10-24-1w	*	2285
Pawnee County—		
Fisher et al Jackson 4 SWc NW NW SE	*	1200
McMann Oil Co. Samples 4 SWc SE NW 36-20-8	50	2915
Pek Pet. Co. Tolin 1 SEc SW 32-21-7	*	2725
Wasson et al Terlton 1 SWc NW SW SE	125	2500
Kay County—		
Harris & Houn Sandusky 1 C S L NW 12-26-1w	¶6	715

OLD FIELDS COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Creek County—		
Billingslee et al McDaniels 1, SWc 11-14-8	¶4	2890

Results During Past Week in Oklahoma Fields Favorable to Curtailment Plan

TULSA, OKLA., Sept. 13.—The week just past was one to cheer the heart of the element bent on bringing Oklahoma daily production to a lower figure through curtailed field activity.

Fewer wells completed, less initial production; fewer rigs built, more rigs abandoned—such was the summary for the week when compared with the week previous. That goes as well for any week since the first reduction in crude prices for the Mid-Continent fields.

As yet production in Oklahoma has failed to respond to the curtailment program. All during August much was promised and a lot printed about the abrupt drops in production. Now the agencies having facilities for gathering production totals aer checking the output for August. They are finding it but little below the record mark set in July.

Of chief significance for the week just past was the drop in initial production for Oklahoma. Less than 10,000 barrels of flush production came from 58 producing wells, from a total of 93 wells completed. Except at Tonkawa, there was not a well of as much as 1000 barrels initial production completed in the state during the week. Both Creek County and the Burbank pool were lacking in the big wells.

Creek County, however, is still a threat to the downward turn of Oklahoma production. Both in recent discoveries and new pools indicated by semi-wildcat completions, the district around Bristow continues to be a "menace."

The Tonkawa field of Noble County is again forging ahead. This pool is doubtless of small area but it does give every indication of boosting the output of high grade crude in North Oklahoma above its present figures, before the end of the year. The figure of 50,000 barrels daily frequently predicted for Tonkawa in recent weeks is by no means impossible nor improbable.

Burbank production dropped to 70,000 barrels for the week, from 567 wells. The absence of the usual volume of flush oil was responsible for the major portion of this loss in daily output. Drilling crews at Burbank had an off week on completions.

Drilling in all fields which promise flowing wells, continues for the whole state. More wells are being completed than are being started each week. That represents the loss in the number of drilling wells.

The central committee on shut down and storage issued an optimistic report following its weekly meeting Monday. Although figures were not given, the statement was made that some 25,000 barrels of independent oils soon will be going into private storage. The report was to the effect that all fields in Texas and Louisiana show a drop in activity and most of them in Oklahoma.

"From the Bristow district," the statement continues, "reports are not so satisfactory and the committee believes that it has not received the co-operation in that district it had a right to expect. The figure success of the shut down movement in Oklahoma will depend largely on the action of the producers in that field. If leases are expiring there, thus causing the drilling of wells to save leases from forfeiture, we urge that a greater percentage of the new production be stored by the producer thereof."

Concerning th e Mid-Continent as a whole, the report adds, "the producer and others observing the situation in this field must remember that the Mid-Continent field is the largest oil producing region in the world and has in excess of 90,000 producing wells in operation. It is therefore impossible for any shut down movement to bring about a radical result over night. It takes time, but if the co-operation continues the curtailment will have a cumulative effect derived from the refusal to start new development work. The failure to start wells during the past thirty days will not be felt before the latter part of October or November."

"To those who are impatient for a pronounced effect and who have been inclined to criticise because more definite results have not already been obtained, the committee would point out that the new production coming in up to the present has resulted from wells started before the shut down movement was instituted; and that this committee has never relied so much upon immediate reduction of flow caused by shutting down drilling wells as it has upon the curtailment of new wells."

Company, Well, Location	Initial Production bbls.	Depth
Carter Oil Co. Page 1, SWc NW SE SE 13-16-10	450	2540
Carter Oil Co. Eighinger 5, C W L SW SW 4-15-10	85	2650
Cosden Oil & Gas Co. Bear 5, SEc NE 10-14-8	150	2495
Iron Mountain Oil Co. Bear 5, SWc SE SE 3-14-8	75	2535
Jomack Oil Co. unallotted 1, NWc NE SE SW 10-16-9	150	3000
Margay Oil Co. Sango 3, C NW SE SW 14-16-9	250	3025
Sheridan Oil Co. unallotted 1, NEc NW 33-16-11	*	3050
The Texas Company:		
Robertson 1, NWc NE 22-14-8	10	3250
Robertson 2, C N½ S½ NE 22-14-8	25	2410
West 2, SWc SE 28-16-9	*	3470
Tibbens Oil Co. Scott 1, NWc SW SW 1-15-8	*	3200
Tidal Oil Co. Sango 2, NWc NE SW 14-16-9	550	3010
Transcontinental Oil Co. Looney 3, NEc NW NW 26-16-9	150	3000
Transcontinental Oil Co. Mico 7, SEc SW SW 23-16-9	275	2970
West et al Michelson 1, NEc 1-18-12	250	2115
Payne County—		
Josey Oil Co. Busby 2, C E L NE NW 2-18-5	¶7	2785
Garfield County—		
Crews Heirs Oil Co. Crews 3, C S L S½ SE 19-22-3w	60	1960
Sinclair Oil & Gas Co. Austin 3, NEc SE NE SW 36-22-4w	75	2225
E. Kesner 6, C NW NW NE 19-22-3w	175	1970
W. Kesner 5, NWc SW NW 19-22-3w	40	2185

OKMULGEE DISTRICT COMPLETIONS

Company, Well, Location	Initial Production bbls.	Depth
Okmulgee County—		
A. B. C. Oil Co. Baumgardner 2, NEc SE NW 30-14-13	10	1460
Black Pet. Co. Colbert 1, SEc NW SW 16-14-14	25	1250
Dresser Oil Co. Sango 3, SEc SW SE 5-13-15	¶½	760
Eagle Pitcher Oil Co. Wolfe 2, SEc SW NW 34-12-12	¶1	2830
Earnest & Harris Tabler 2, NWc SE NW 23-14-12	25	1800
Geary & Owens Carm 1, NEc NW SE 7-13-15	¶2	2750
Gladys Belle Oil Co. Morton 1, SWc NE NW 8-13-12	*	2325
E. G. Hastings Harrison 3, C W L NW SW 17-15-14	*	1890
W. M. Hewitt Wright 6, NEc SW SW 22-14-14	25	1760
Huckins Oil Co. Peters 3, C SE NW 17-15-14	*	1860
Indiahoma Oil Co. Kimble 1, SEc SW NW 23-15-11	¶5	2400
Minnehoma Oil Co. Thompson 1, SEc NE SW 6-15-11	10	2620
F. D. Misner Colbert 5, N½ SW SW 16-14-14	10	1715
Octa Oil Co. Sulphy 1, SEc NE SW 8-12-13	25	1990
Waite Phillips Bowman 1, C S L N½ NW NE 32-13-13	¶½	2130
W. B. Pine Jacobs 5, C E L SE SE 33-12-12	60	2360
Wallace Oil Co. White 9, C S L SE SE SE 27-15-18	10	1625
Okfuskee County—		
Foster Oil Co. Cully 1, NWc NE NW 12-10-9	75	3010

CARTER GETS BIG WELL IN BRISTOW, OKLA., DISTRICT.

Tulsa, Okla., Sept. 14.—The Carter Oil Company has a big well on the Catt farm in the Bristow area of Creek County, Oklahoma, good for 200 barrels an hour flush production at 3150 feet.

Company, Well, Location	Initial Production bbls.	Depth
Gypsy Oil Co. Brooks 1, SEc SW 2-10-9	*	1125
Henry et al Barnett 6, C S L SW SW SW 24-11-11	25	2430
Independent Oil Co. Cully 2, SWc NW NW 12-10-9	25	3130
Iron Mountain Oil Co. Conrad 1, SEc SW SE NW 1-10-10	*	3010
Lyons Pet. Co. Clough 1, SWc SE 2-11-9	*	2980
Robinson et al Barnett 7, C E L NE SW 24-11-11	25	2680
J. R. Wilson Sinkiye 1, SWc NW 36-13-10	*	3230
Muskogee County—		
J. M. Foltz Barber 1, C W L SW SE 26-15-15	*	2105
B. F. Slucher McBilbray 2, C W L SW SE SE 13-13-15	*	2210
McIntosh County—		
G. A. Long Broadnaux 3, NWc SE NW 31-12-14	*	2225
Frank Phillips et al Smith 3, SWc SE NE SE 21-12-14	¶1	2200
Insert in Okmulgee County—		
Kimberley et al Barnett 1, SWc SE 20-11-12	*	2710
Kingwood Oil Co. Hawkins 2, NEc NW NE 4-11-12	20	2480

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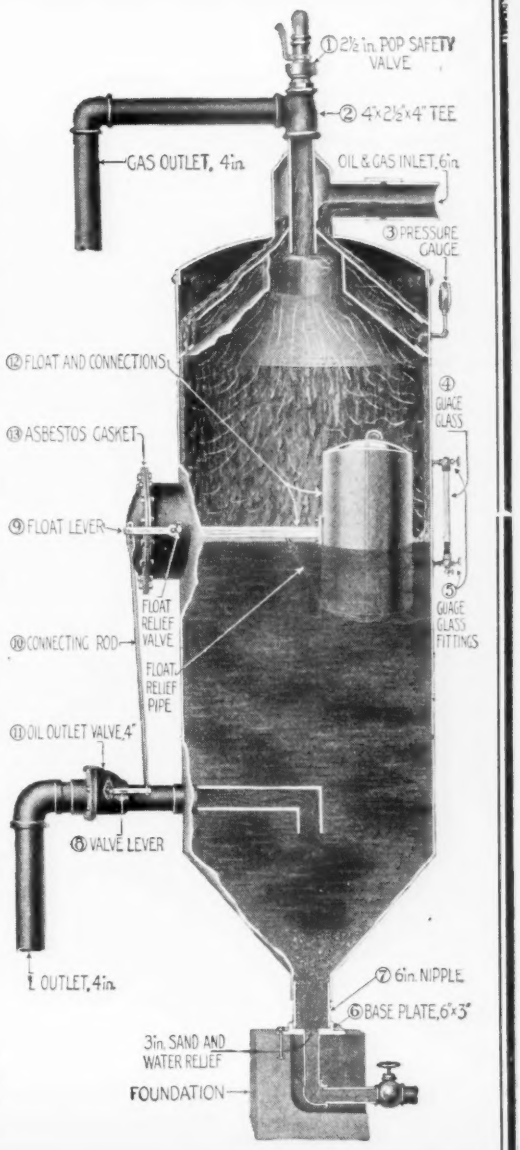


KANSAS PRODUCTION

Independence, Kansas, Sept. 13.—The daily average production of the oil fields of Kansas was as follows last week:

	Barrels
Augusta	20,500
Elbing Peabody	17,500
El Dorado	18,500
Covert and Florence	10,000
Other fields	24,500
Total	91,000
Last week	88,300

KANSAS COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Greenwood County—		
Ark. Fuel Co. Bays 5, C S L SE SW 29-23-13e	50	1685
Atlantic Pet. Co. Clinger 12, NWc SW NE 15-23-13e	*	2180
C. & C. Leasing Co. Brownson 1, SEc NW 6-26-13e	¶2½	1625
Franklin Oil Co. Dalton 4, C E L SE SE 11-24-12e	25	1770
Greenwood Oil Synd. Hodgson 1, C E L SW SE 25-25-12e	*	2275
R. G. Gillespie Swanson 4, NEc SE SE 20-23-13e	125	1710
Jones 3, C SE SE 21-23-13e	10	1720
Mission Oil Co. Shindler 5, C N L NW NW 27-23-13e	25	2120
Ralco Oil Co. Shadel 2, C S L SE SW 15-23-13e	150	1645
Ruth Oil Co. Dalton 7, NWc NE SE 11-24-12e	10	1555
St. Louis Ref. Co. Knebler 5, SWc NW NE 15-23-13e	*	1795
Selby Oil Co. Wingrove 5, C S L SE SE 16-28-11e	10	1155
Shaffer & Hawley Schinder 1, SEc NE NW 15-23-13e	10	1820
Tidal Oil Co. Berry 3, C W L NW NE 32-23-13e	25	1745
Vincent Pet. Co. Dane 13, CNL NW SW 12-25-12e	35	1755
Butler County—		
Derby Oil Co. Houston 2, C W L SW NW 24-28-5e	100	2795
Lewis Oil Co. Brown 11 C S L SW SE 25-29-5e	50	2725
National Ref. Co. 2, SW SE 26-20-5e	90	2810
Shawver et al Guthrie 1, NWc SE 1-29-4e	*	3360
Tidal Oil Co. Bunnell 1, SWc NW NW 26-28-5e	250	2810
Woodson County—		
Atlantic Pet. Co. Bahr 6, SEc NW NE 28-23-13e	75	1700
Dresser Oil Co. Hisler 6, C S L SW NW 23-23-13e	20	1750
Empire Gas & Fuel Co. Bahr 2, C S L NE NW 23-23-13e	25	1695
Marland et al Hisler 7, C N L NE SW 23-23-13e	15	1745
Elk County—		
Charles Christy Conway 1, SEc NW NW 13-29-10e	*	2090
Meridian Pet. Co. Barnes 1, NEc SE 4-30-11e	*	2275
Harvey County—		
A. R. Gowne Stahl 1, NEc SE NE 29-23-2e	*	2900
Cowley County—		
Emerald Oil Co. Kikuk 1, SWc NE 24-32-4e	25	1485

New Field in Butler County, Kansas, Promised Thorough Testing by Gypsy

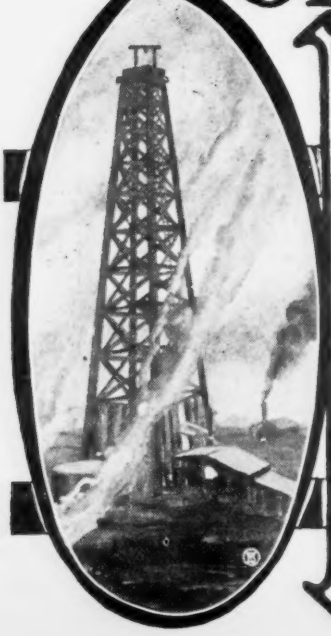
TULSA, OKLA, Sept. 13.—With the entry of the Gypsy Oil Company into the Butler County district where the Phillips Pet. Co. has a wildcat well producing 100 barrels daily this new section of Kansas is due to be tested more extensively. The Gypsy Company last week bought 400 acres near the Phillips well. Two wells are to be drilled on the property at once. It is reported that upwards of $1000 per acre was paid for the lease.

The acreage taken includes the quarter section in the southeast of 35-24-4, the west half of the southeast of 1-24-4, the north half of the southwest and the northwest quarter of 6-24-5 east.

Near the Phillips well in 1-24-4, Merriam and Findeiss are ready to drill a test in 25-24-4. The Phillips Petroleum Co. is to drill another well in 6-24-5. Bellport and others are to drill near the Phillips well.

Kansas fields for the past week showed a total of twenty nine completions with only six failures, the daily responded to these new wells going back above the 90,000 mark daily.

EVERYTHING for the OIL WELL



Operators in the oil fields in this territory have found that the many facilities we maintain assure them at all times

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PEDEN IRON & STEEL CO.
HOUSTON SAN ANTONIO
FT. WORTH SHREVEPORT

Big Well for New Okemah Field in Okfuskee County

Tulsa, Okla., Sept. 13.—In the Okemah district of Okfuskee county, Oklahoma, the Gypsy and Empire Companies have a well good for 20 barrels an hour in the northeast quarter of section 2-10-9. The sand was found at 3062 feet and drilled to a total depth of 3075 feet.

West of the Okemah pool the Carter Oil Company has a hole full of oil at 3105 feet in the northwest quarter of section 11-10-9. A dry hole is between the well and the first producer at Okemah.

TEST ON OTOE INDIAN RESERVATION SHOWING 2,500,000 FEET OF GAS

Tulsa, Okla., Sept. 13.—A test of the Oldorn Oil Company in the Otoe Indian Reservation of Oklahoma, section 20-22-2 east, found 2,500,000 cubic feet of gas at 1748 feet late this week. The well is being drilled deeper.

THE WEEK IN OKLAHOMA OIL FIELDS TOLD IN FIGURES

County—	New Rigs	Rigs Abn.	Completions	Producers	Gas Wells	Failures	Initial Prod.
Creek	11	1	16	12	1	3	2,410
Payne	0	0	1	0	1	0	....
Garfield	7	0	4	4	0	0	350
Tulsa	2	0	0	0	0	0	....
Osage	6	4	17	15	0	2	2 405
Noble	0	0	3	2	0	1	3,200
Pawnee	0	0	4	2	0	2	175
Kay	0	0	1	0	1	0	....
Okmulgee	7	1	19	10	5	4	230
Okfuskee	4	1	8	4	0	4	150
McIntosh	2	0	2	0	1	1	....
Muskogee	1	0	2	0	0	2	....
Wagoner	1	0	0	0	0	0	....
Carter	4	1	4	3	0	1	310
Stephens	2	1	4	2	1	1	20
Caddo	2	0	3	2	0	1	60
Garvin	0	0	2	2	0	0	60
Comanche	0	0	1	0	0	1	....
Kiowa	0	0	1	0	0	1	....
Hughes	0	0	1	0	0	1	....
Totals	49	9	93	58	10	25	9,370
Last week	53	2	129	92	11	26	27,495

Stockholders to Be Held Liable for Company Debts

Wichita Falls, Texas, Sept. 12.—The stockholders of the Victor Refining Co., a joint stock association that was thrown into the hands of a receiver early this year, are to be held liable for the debts created by the company, according to a decision rendered in the 89th district court here last week in the suit of the City National Bank of Commerce et al vs. Victor Refining Company, et al. The suit was for approximately $125,000, and the presiding Judge ordered that a verdict be given the plaintiffs for the full amount.

The stock of the Victor Refining Company is largely owned by parties living in Wichita Falls and North Texas and was sold when the oil promotion business was at its peak. Since many of the stockholders are not financially able to pay their proportion of the indebtedness of the company it will probably be necessary for the stockholders who are solvent to assume the burden of those who are insolvent.

The action of the court in deciding that the stockholders are responsible for the indebtedness of the company collectively as well as individuals has established a precedent that is expected to lead up to other litigations of a similar character. There are several other defunct refinery and producing organizations in the North Texas district that were organized under a joint stock association plan.

Gulf Pipe Line Company Laying New 6-inch Line

Tulsa, Okla., Sept. 13.—In order to get connection with more high grade crude oil the Gulf Pipe Line Company of Oklahoma is running a line in the new Creek County pool in township 14, range 8. This extension of six inch line will be twenty eight miles long from a pumping station in township 14 range 12.

Natural Gasoline Plant In South Electra Field

Wichita Falls, Texas, Sept. 14.—Construction work on the Gulf Production Company's 250,000 cubic foot daily capacity natural gasoline plant in the South Electra field is nearing completion. This plant is of the standard type generally erected by the Gulf Company, and represents an investment of approximately $30,000. It is located on the S. B. Burnett tract, Lease "C" in the northern part of Section 6, and will draw gas from Gulf's producing wells on the Mrs. Grace Jennings, Mrs. E. D. Collett and S. B. Burnett leases. According to a test made on the gas produced by these leases, the recovery amounts to about one gallon per thousand cubic feet. The equipment in the plant will include two 50 H. P. Bessemer gas engines and two compressors.

Revere Oil Takes Over Texas Producing Holdings

Wichita Falls, Texas, Sept. 12.—The entire holdings of the Texas Producing Syndicate of Wichita Falls have been acquired by the Revere Oil Company of Fort Worth following a merger consummated last week. The properties include 73½ acres on the M. V. Keller tract in the South Bend field, Young County, Texas, with 10 wells producing approximately 200 barrels daily from the 1900-foot oil sand. Deeper producing horizons are known to exist on this lease, and the new owners have already taken steps to drill No. 1 well to the 2100-foot level.

The deal also included a working interest owned by the Texas Producing Syndicate in the Red River bed properties of the Buckeye Petroleum Company in Wichita County. These properties consist of three producing wells, two of which are tied up by the Federal Receiver. One-fourth of a section on the John & Jeff Waggoner land; 22½ acres on the Hamilton farm, Lewis Survey; and 17 acres in the Gibbs Survey, all in the South Electra field, were the most important undevleoped leases turned over to the Revere Oil Company, in addition to several wildcat leases in other sections of the state. A producing royalty on a tract being drilled by the Texhoma Oil and Refining Company in the Southeast Burkburnett field was also obtained by the Revere in the transaction.

Look What Our Pool Is Doing; 3,000-Bbl. Well

Shreveport, La., Sept. 14.—The Simms Oil Company has a 3,000-barrel well in the Smackover, Arkansas, pool, on a 1200 acre tract, east of the Standard Oil Company's No. 1 B. Murphy. The well came in Wednesday night at 2025 feet.

This is The OIL WEEKLY'S pool—at least The OIL WEEKLY had a hand in naming it, so of course it is productive!

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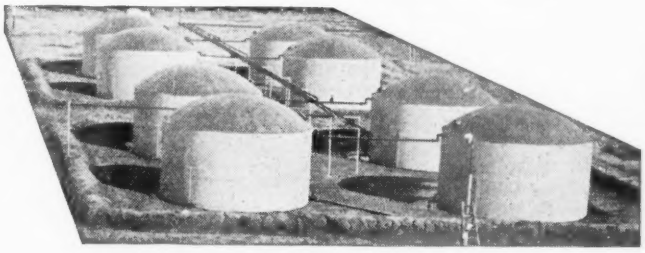

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DALLAS, TEXAS

New Development in the Eastland-Ranger District Centered Around Recent Wells

FORT WORTH, TEXAS, Sept. 12.—New developments in the Eastland-Ranger territory are now centered in and around Section No. 3 of the H. & T. C. Ry. Co. Survey Block 3, about four miles southwest of the town of Eastland, where a shallow and a deep wildcat producer were completed recently. During the past week the Panhandle Refining Company started rigging up for two tests on the C. O. Owens tract in the SW corner of the SE¼ of the NE¼ of Section 3 to offset the drilling well and rig belonging to the Plateau Oil Company on the west. C. M. Root is preparing to spud in a second test on the L. R. Hough tract located due south of the Panhandle lease, and is drilling around 900 feet on his first test commenced since the deep wildcat producer was brought in early last month by the Car-De-Zone Oil Company on the L. R. Hough tract with initial flow of 1000 barrels natural at 3350 feet. The shallow producer, which was completed several weeks ago flowing 75 barrels at 1345 feet by the Plateau Oil Company on the C. O. Owens tract, is reported holding up to more than 50 barrels.

The Plateau Company is also rigging up for a test to be drilled to the north of its shallow wildcat producer which will be on the J. R. Stubblefield farm in the SE¼ of Section 28 of the H. & T. C. Ry. Co. Survey Block 4. The Car-De-Zone Oil Company's second test on the Hough farm is drilling below 700 feet for the deeper pay. Several other tests are getting underway in the immediate vicinity of Section 3, and a drilling campaign of no small proportions is looked for within the next two months owing to the existence of a shallow and deep producing horizon. However, new developments in other sections of Eastland County are noticeably on the wane as result of the reduced price of crude.

The pool located south of the town of Eastland on the Martin, Henry and Burkett tracts has been drilled extensively, and new producers being completed afford only a small initial flow as compared with the large flush obtained when the territory was first opened up. During the past week two wells were completed on the Joe Burkett tract with an initial flow of 30 barrels each at 3270 feet, while Samuels, West & McCandless' No. 3 G. W. Martin is flowing 80 barrels from an unusually shallow sand found from 3170 to 3190 feet. This well is drilling below 3215 feet with hopes of picking up the regular sand below 3300 feet.

The productive limits of the northeast wing of the Pionneer field have been given a broad extension to the north following the completion of the Simms Oil Company's No. 1 J. L. Erwin, making 95 barrels from three feet of pay encountered at 2512 feet. This well picked up the lime at 2515 feet and was drilled to 2540 feet. Between this well and the proven area, W. P. Herrick's No. 1 F. W. Kersch gauged 100 barrels daily early this week after drilling into the lime pay from 2480 to 2505 feet. The owner of this well is planning to drill deeper into the pay.

The first good sized producer completed within the townsite of Pioneer for a number of weeks was brought in last week on Block "13" by Cohan and associates with an initial flow of 400 barrels from 2475 to 2520 feet. To the northwest of the Townsite, Texas Pacific Coal and Oil Company's No. 1 Judge Scott showed good for 300 barrels from 2495 to 2518 feet.

Lack of new production being added for the past three weeks along with a rapid decline of old producers in the fields caused Stephens County to fall off 920 barrels in daily average production during the past week.

Stephens County recovered slightly from its slump in activity during the past week and reported about 850 barrels of new production from various sections of the county, but sustained a drop of 920 barrels in daily average production, bringing the output of the county down to 35,700 barrels. The largest producer was Haile & Knight's No. 1 Shipley, located in the south edge of the Curry-Aetna pool, flowing 420 barrels after shot of 50 quarts from 3175 to 3205 feet. Further south on the Jones tract, Snowden & McSweeney's No. 2 G. P. Jones began flowing about 100 barrels daily early this week from 10 feet of pay drilled into at 3150 feet. This well is reported to have began caving soon after drilling in, and an effort is being made to cleanout to drill deeper into the pay. Snowden & McSweeney's No. 3 Ashburner is reported flowing by heads while drilling below 3225 feet.

An unusually large shot was discharged in the Winterset Oil Company's No. 1 Lee, located in the extreme east edge of Stephens County last week causing the hole to bridge 300 feet from the surface. A charge of 1000 quarts was exploded below 3140 feet. This test is located northwest of the Hart pool in Palo Pinto County.

CENTRAL WEST TEXAS FIELDS

CENTRAL WEST TEXAS PRODUCTION

Fort Worth, Texas, Sept. 11.—The daily average production of the various fields in Central West Texas for the past week is divided about as follows:

STEPHENS COUNTY

	Barrels
Mid Kansas Oil & Gas Co.	4,300
The Texas Co.	3,715
Gulf Prod. Co.	2,930
Prairie Oil & Gas Co.	2,670
Humble Oil & Ref. Co.	2,600
Texas Pacific Coal & Oil Co.	1,855
Magnolia Petroleum Co.	1,500
Fensland Oil Co.	825
Sun Co.	800
E. A. Lendreth Co.	475
Sinclair Oil & Gas Co.	460
Pierce Oil Corp	320
Fred B. Foster & Co	150
Simms Oil Co.	150
White Oil Corp	85
Miscellaneous	12,008
Total	34,843
Last week	36,620

DESDEMONA AND PIONEER.

Magnolia Pet. Co.	825
Humble Oil & Ref. Co.	430
Mid-Kansas Oil & Gas Co.	300
The Texas Co.	135
Texas Pacific Coal & Oil Co.	110
Prairie Oil & Gas Co.	95
Sinclair Oil & Gas Co.	75
Sun Co.	20
Miscellaneous (inculdes Pioneer)	9,000
Total	10,990
Last week	11,350

EASTLAND COUNTY.

Texas Pacific Coal & Oil Co.	1,390
Prairie Oil & Gas Co.	1,120
Sinclair Oil & Gas Co.	1,060
Gulf Prod. Co.	660
Magnolia Pet. Co.	480
The Texas Co.	450
Humble Oil & Ref. Co.	185
Mid-Kansas Oil & Gas Co.	45
Simms Oil Co.	40
Sun Co.	35
Miscellaneous	8,675
Totals	14,140
Last week	14,395

MISCELLANEOUS

Strawn-Palo Pinto County	1,620
Moran-Shackelford County	1,035
Brown County	640
Corsicana	545
Mitchell County	140
Thrall	135
Coleman County	80

STEPHENS COUNTY COMPLETIONS

Company, Well, Location	Initial Production Bbls.	Depth
Haile & Knight's Shipley 1	420	3205
King, Booth & Nesbit's Brown 1	65	3235
Lone Star Gas Co.'s Warren 19	10	1730
Mid-Kansas Oil & Gas Co.'s J. W. Hill 10	225	3300
Roxana Pet. Corp. Ball 6	¶8	3370
The Texas Co. Sutphen 1	30	3409
Texas Pacific Coal & Oil Co. Satterfield 23	50	3880
York & Bateman's Sloan B-1	50	3435

EASTLAND COUNTY COMPLETIONS

Company, Well, Location	Initial Production bbls.	Depth
Paul S. Ache's Pioneer Townsite Blk "34" 1	100	2505
Invincible Oil Corp.'s Naron 1	75	2500
Associated Oil Co.'s T. E. Downtain 1	250	3340
Cohen et al's Pioneer Townsite Blk "13" 4	400	2520
Eastland Oil Co.'s Joe Burkett 2	30	3270
Robt. D. Gordon et al's C. U. Connellee 1	30	3390
H. B. Shinholt et al's J. R. Stubblefield 1-A	¶6	3145
Simms Oil Co.'s Irwin 1	95	2540

Company, well, location	Initial Production bbls.	Depth
Texas Pacific Coal & Oil Co.'s Judge Scott 1	300	2518
Yates Oil Co.'s Joe Burkett 2	30	3275

EASTLAND AND RANGER DRILLING REPORT

Ardizzone & Braden Oil Co.'s W. C. Kincaid 7, dr 1690 ft.

Barkley et al's Wright 3, sd 3685 ft; Wright 4, rig.

H. R. Courtwright et al's Rosenquest 1, plugging to abn 3795 ft; Kellett 1, rig. Car-de-Zone Oil Co.'s L. R. Hough 2, dr 740 ft; Agnes Harwood 1-A, dr 560 ft; J. H. Latham 1, dr 3300 ft. Barney Carter's J. W. Langford 3, set cas 925 ft.

Drury Petroleum Co.'s T. E. Luse 1, sd for cas 2840 ft. Day & Everest's W. F. Davenport 1, dr 3320 ft; A. F. Loftus 1, fsh tools 910 ft. Daugherty & Clark's Jacob Lyerla 1, spd and sd. G. A. Davisson et al's Jacob Lyerla 1, rig; T. P. Ry Co. 1, rig. Duquesne Oil Corp.'s J. L. Johnson 1, rig.

Eastland Oil Co.'s G. W. Martin 4, fsh cas 3160 ft; Martin 9, rig; Martin 10, timbers; Martin 11, dr 800 ft. W. T. Eby Interest's Paul Chastain 1, dr 1545 ft.

Garrett & Smith's T. L. Overby 1, dr 640 ft.

Humble Oil & Ref. Co.'s M. B. Harris 2, set cas 3280 ft; W. L. Miller 1, fsh tools 2670 ft. W. D. Hassenfussee et al's Radford 1, sd 1810 ft.

Manly Drilling Co.'s Hillcrest Addition 1, dr 2765 ft. McLester & Harris' Hillcrest Addition 1, dr 2210 ft. Mastex Oil Co.'s Hill 1, sd 3520 ft. Miller Oil Co.'s Watson 1, sd 1580 ft. May & Clayton Drlg. Co.'s Higginbotham 1, dr 2090 ft.

New Southern Oil Co.'s W. J. Baumgardner 3, fighting cave 3460 ft. Nixon Oil Co.'s C. T. Webb 1, sd for fuel 425 ft.

Plateau Oil Co.'s C. O. Owens 2, dr 500 ft; Owens 3, rig; J. R. Stubblefield 1, rig. Porter & Livingston's Joe Burkett 1, dr 2165 ft. Panhandle Refining Co.'s C. O. Owens 1, rigging up; Owens 2, rig.

Richie & Keudell's Clements 1, 1600 ft oil in hole from black lime pay 2915 to 2930 ft, td 2935 ft. Roberts Interests' Roberts 1, fsh tools 3405 ft. Rumbaugh Drlg. Co.'s J. R. Stubblefield 1, sd 3160 ft. C. M. Root's L. R. Hough 1, dr 860 ft; Hough 2, rig.

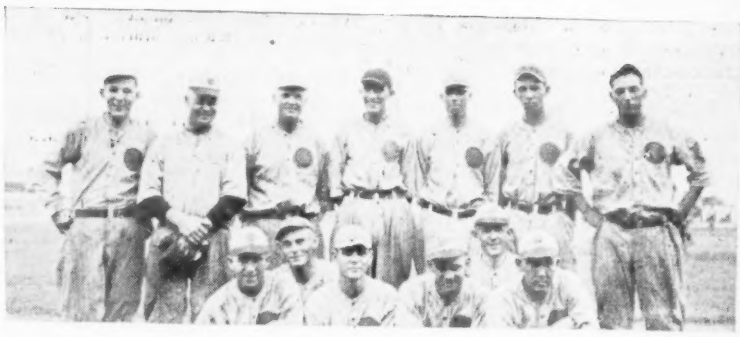
States Oil Corp.'s G. W. Martin 4, sd 3235 ft. W. I. Southern et al's J. B. Robinson 1, showing oil dr 3350 ft. Sinclair Oil & Gas Co.'s J. W. Davis 6, rig. Slay, Simon & Smith's G. W. Rose 1, dr 1940 ft. Samuels, West & McCandless' G. W. Martin 2, showing oil, sd for shot from 3335 to 3360 ft; Martin 3, making 80 bbls from 3170 to 3190 ft, dd 3215 ft. Marshall Spoonts' McClesky 1, dr 1350 ft.

Texas-Iowa Oil Co.'s J. C. Laney 1, sd making 3 million ft. gas, td 2650 ft. Tex-Land Oil Co.'s C. U. Connellee 1, dr 850 ft. Texas Pacific Coal & Oil Co.'s W. T. Barker 4 rig.

Frank Vance et al's C. Owens 1, spd and sd.

Westland Synd.'s J. R. Stubblefield 1, sd for water 2060 ft. Weatherall Prod. Co.'s Fulfer 1, dr 3175 ft; Fulfer 2, sd 185 ft.

Yates Oil Co.'s Joe Burkett 3, dr 3210 ft.



Wichita Falls, Texas, Sept. 12.—The Gulf Production Company's baseball team carried away high honors in the Wichita Falls City League this summer, and was recently presented with a trophy that is to bear the name of every player. The club's success in winning the championship was largely contributed to through the efforts and time devoted by J. Alvin Gardner in coaching the team. The players in the above picture are: standing, left to right, "Guzz" Friedlander, first base; "Chubby" Sinclair, right field; Billy Maloney, center field; "Snipe" Connally, pitcher; Warner Rankin, third base; Hood Kizziar, shortstop; Bill Lourcey, catcher. Sitting, from left to right, Otis Haynie, shortstop; Joe Pyron, utility; Ross, catcher; Bowden Maben, utility; Earl Matthews, second base; Lloyd Oberwetter, left field.

PIONEER DISTRICT DRILLING REPORT.

Alsworth et al's Ribble 1, spd and sd. A. D. Cockrell et al's Marshall 1, rig.

Davis et al's Townsite block "26" 1, rig. Davidor Development Co.'s Anderson-Bowden 1, sd for water 200 ft. Dyer Bros.' E. M. Curry 1, spd and sd. Drury Petroleum Co.'s Townsite block "33" 4, sd for fsh tools 2000 ft.

Essary Drilling Co.'s (formerly Miller & Malloy) Townsite block "21" 1, sd for cas 2430 ft.

Humble Oil & Ref. Co.'s Black 1, making 5 million ft gas dr 2445 ft; Dill 1, dr 2565 ft. W. P. Herrick's F. W. Karsh 1, flowing 160 bbls from 2480 to 2505 ft, probably dr deeper.

Invincible Oil Corp.'s Nelson 2, dr 2930 ft; Nelson 3, dr 970 ft.

Junior Oil Co.'s Webb 3, rig. L. A. Knight's J. L. Erwin 1, pul pipe 2390 ft.

Maymack Oil Co.'s L. King 1, spd and sd. C. B. McBride et al's Brown 1, rigged up and sd. Maxwell 1, sd 1060 ft. Miller & Malloy's Shirley 1, rig down; Phler 1, rig. Montgomery Bros. & Ray's Radford 1, dr 1040 ft. McBride & Perry Oil Co.'s Morgan 1, plugging to abn 630 ft. M. L. May's Townsite block "20" 1, dr 1765 ft. McCamey, Sherrin, Dumas et al's D. J. Armstrong 4, dr 2140 ft; Armstrong 5 and 6, lcns; Armstrong 7, sd for cas 1010 ft; Armstrong 8, lcn; Armstrong 9, dr into salt water, plugging back from 2515 ft; Armstrong 10, lcn; Brooks 1, dr 1945 ft; Mrs. Ora Moore 2, dr 2025 ft; Moore 3, fsh tools 960 ft; Moore 4, dr 1845 ft; Moore 6, lcn; Johnson 1, sd 1135 ft. Forest Miracle Oil Co.'s King 1, sd for cas 1770 ft; King 2, dr 915 ft.

Pacific & Gulf Oil Co.'s Flippen 1, sd 615 ft. Pioneer Pet. Co.'s Baird 1, sd 1715 ft; L. King 3, dr 830 ft; King 4, dr 520 ft. Pittsburg-Western Oil Co.'s Puett 3, rig. Pioneer Synd.'s Jacobs 1, dr 1425 ft. Pathfinder Oil Co.'s Townsite block "23" 1, dr 1600 ft; Mrs. Ora Moore 1, dr 1700 ft; Moore 2, dr 1800 ft; Moore 3, dr 1900 ft. Pioneer Proven Oil Synd.'s Anderson 1, rigging up. Pioneer States Oil Co.'s Townsite block "27" 1, dr 620 ft.

Rainbowend Oil Co.'s D. J. Armstrong 4, dr 1745 ft. Harris 2, rig. Revere Oil Co.'s Cunningham 1, cas trouble 1565 ft.

T. B. Slick's Sheppard 1, dr 745 ft; Sheppard 2, rig. States Oil Corp.'s W. R. Smith 3, sd for cas 2450 ft; W. R. Smith 4, rig. R. E. Sweeney's Townsite block "22" 1, re-bldg rig 2445 ft.

Texas Pacific Coal & Oil Co.'s C. P. Braupon 2, dr 2465 ft; Judge Scott 2, rig; G. B. Saucier 1, rig.

Wichita Falls, Texas, Sept. 12.—The W. T. Waggoner Interests, which owns and operates a refinery at Electra and has considerable acreage in the South Electra field being developed for oil, has announced that a huge dam and water reservoir is to be erected shortly in Wilbarger County on Beaver Creek to provide a sufficient supply of water for the plant and development of the Waggoner leases throughout the year. Actual construction work on the project is to commence shortly.

STEPHENS COUNTY DRILLING REPORT

(Note—This report does not include wells shut down indefinitely.)

Agnew et al's Hudspeth 1, fsh bailer 1605 ft.

Buckeye Dev. Co.'s Walker 7, dr 2140 ft. Benson Drilling Co.'s Thomas 2, dr 1095 ft. Booles & Bartrug's W. W. Copeland 1, dr 1285 ft.

Channel Oil Co.'s Moon 1, dr 3965 ft.

Dawson & Davis' Coogher 1, sd for tools 3500 ft. Denson & Spurck's Black 1, dr 2720 ft. Drake Oil Synd.'s Drake 1, dr 2715 ft.

Eliasville Pool Oil Synd.'s Douglas 1, sd for cas 3155 ft.

Fensland Oil Co.'s J. F. Brown 9, dr 3075 ft. Fink & McFarland's R. O. Jackson 1, showing gas sd 2180 ft. Fred B. Foster & Co.'s Shipley B-1, dr 2800 ft.

Glasscock Prod. Co.'s Cunningham 1, fsh cas 1400 ft.

Humble Oil & Ref. Co.'s Curry B-1, dr 2460 ft; Curry B-2, fsh tools 2115 ft; Curry B-3, run cas 520 ft; Mrs. J. B.

Hart 5, sr 3185 ft. Hagaman et al's Hagaman 1, dr 2995 ft.

Illinda Oil Co.'s Walker & Caldwell A-3, dr 3180 ft.

Johnson Oil Co.'s Jones 1, dr 3295 ft. King, Booth & Nesbit's Abney 2, dr 2160 ft.

Little et al's Humphreys 1, sd 3390 ft. Lee Oil Co.'s Walker & Caldwell 2, dr 2800 ft. Little Caddo Oil Synd.'s Mrs. J. B. Hart 2, dr 1845 ft. Livingston et al's Hodges 1, dr 1065 ft.

Mahlstedt Mook Oil Co.'s Baker 3, hole full oil, sd for shot 3195 ft. Maryland Drilling Co.'s Akin 1, sd for water 3275 ft. Miller Bros.'s W. T. Gurney et al 1, plugging to abn 3900 ft. Mid-Kansas Oil & Gas Co.'s G. W. Hill (Acct. 1) 9, run cas 3745 ft; G. W. Hill (Acct. 1) 11, dr 3185 ft; S. H. Hill 4, dr 1480 ft; Atkins (Acct 1) 6, sd 1355 ft; Atkins (Acct. 1) 7, sd 815 ft; Lee 1, rig burned, td 3325 ft. Magnolia Petroleum Co.'s J. M. Rush 10, dr 1840 ft; C. N. Guest 5, dr 1680 ft.

Pay-Tex Oil Co.'s J. M. Lane 3, fsh cas 3115 ft. Prairie Oil & Gas Co.'s T. L. Adams 1, fsh tools 3805 ft; A. A. Atkins 12, sd 1490 ft; T. M. Corbett 1-C, showing oil and gas, co after shot 290 qts from 3220 ft. Pennock Oil Co.'s Moore 1, run cas 2460 ft; Jones 1, dr 620 ft.

Roxana Petroleum Corp.'s Corbett 1, dr 4350 ft. Roeser et al's Shipley 2, fsh cas 3155 ft.

Swensondale Oil Co.'s P. Swenson 21, dr 1710 ft. Settled Production Co.'s Keel 2, ur 2690 ft. Snowden & McSweeney's Jones 2, testing cas 3005 ft; Ashburner 3, dr 2990 ft.

The Texas Co.'s A-28 Parks run cas 2920 ft; Parks A-31, dr 1600 ft; Parks A-32, dr 2375 ft; Curry 9, dr 2300 ft; Pierce 12, dr 2915 ft; Day 11, dr 2210 ft; Fite 1, sr 1600 ft; Heatley 3, dr 2700 ft; Houston 3, dr 1840 ft; Mrs. S. E. Wilson 2, sd 3485 ft; Womack 4, dr 870 ft; Lauderdale 9, dr 1750 ft; Black Bros. 17, dr 2725 ft; Searcy 1, run cas 2535 ft. Texas Pacific Coal & Oil Co.'s T. L. Adams 5, dr 3095 ft; A. S. Veale 3, sd 3095 ft. Texas Consolidated Oil Co.'s Martin 3, dr 2300 ft; Martin 4, dr 2600 ft.

Winterset Oil Co.'s Lee 1, sd 3200 ft.

DESDEMONA DRILLING REPORT.

Brainard Petroleum Co.'s Freeman 1, showing gas dr 2650 ft.

Harrison et al's Tidwell 1, dr 1800 ft. W. H. Hodnett et al's Allen 1, rig.

Kirk & Brewer's Westmoreland 1, dr 1700 ft.

ELECTRA DRILLING REPORT

Associated Oil Co.'s L. P. Douglass 1, sd 480 ft.

M. J. Bashara's C. B. Ancell 1, sd 1800 ft Bridwell & Heydrick's W. T. Waggoner 16, sd 2170 ft; Waggoner 17, sd 50 ft. Buchannan & Lyons' Mrs. G. Jennings 1, testing 1825 ft. Buffalo Texas Oil Co.'s W. Parker 1, sd 1900 ft.

Camp Oil & Gas Co.'s H. A. Overall 2, dr 1952 ft; L. P. Douglass 1-A, set cas 1910 ft; L. P. Douglass 2-A, sd 1020 ft; Douglass 1-B, sd 1020 ft. Carter Oil Co.'s S. B. Burnett 10, sd 1420 ft. Cline Oil Co.'s Waggoner 2-A, sd 1920 ft; Waggoner 3-A, sd 1930 ft; H. Munger (K-M-A Field) 10, set cas 1600 ft. Clover Oil Co.'s Waggoner 2, sd 1850 ft; Waggoner 3, rigged up and sd; Waggoner 4, sd 50 ft. Culberson et al's J. & J. Waggoner 12, sd 1100 ft. Cumley & Wharton's G. Jennings 2, sd 1995 ft; Fisher 1, dk.

Empire Gas & Fuel Co.'s S. B. Burnett 35, sd 942 ft; Burnett 56, rigged up and sd; Burnett 57, sd 400 ft; Burnett 60, sd 1450 ft; Burnett 65, sd 1920 ft; Burnett 66, sd 1955 ft; Burnett 67, sd 1930 ft; Waggoner 8-A, dk.

Fitzgerald Synd.'s W. T. Waggoner 3, sd 1510 ft. Fred B. Foster & Co.'s Throckmorton 1, dr 1968 ft.

Green & Dale's Beaver-Electra Ref. Co. 3, rigging up; Beaver Electric Ref. Co. 4, dr 1100 ft. W. J. Green's Mrs. G. Jennings 1, sd 300 ft. Griswold Oil Co.'s Burnett 28, dk; Burnett 29, sd 600 ft; Burnett 30, dk; Burnett 13-B, dk; Waggoner 1-A, sd 1600 ft. Gulf Production Co.'s E. A. Dale 1, set cas 1470 ft; G. Jennings 6, r 1860 ft; L. P. Douglass 4-B, dr 600 ft; Burnett 12-C, pumping to test 1950 ft; J. D. Melton 4, set cas and cemented 1676 ft; Waggoner 1-E, dr 1660 ft; Douglass 4-B, dk.

Hachaday & Shaw's Waggoner 2-C, rigged up and sd. Harper et al's J. & J. Waggoner 1, sd 1200 ft. Harrell et al's Mrs. G. Jennings 1, sd 2015 ft. Hartford Trust's S. B. Burnett 2, water trouble 1800 ft. Harvey et al's W. T. Waggoner 3, lcn; Waggoner 10, sd 1700 ft. Hegwood et al's Waggoner 2, dr 1820 ft. Hill & Jones' Waggoner 1, sd 1585 ft. Houston Oil Co.'s W. T. Waggoner 4, set and cemented cas 1605 ft. Hub Oil Co.'s Kemp & Newby 9, dr 1010 ft. Humble Oil & Ref. Co.'s Waggoner 4-B, dr 600 ft; J. & J. Waggoner 1, dr 1940 ft. T. F. Hunter et al's J. & J. Waggoner 2, sd 1530 ft; Waggoner 3, sd 1830 ft; and T. W. Roberts 5, fsh 890 ft.

Jefferson Oil Co.'s J. & J. Waggoner 3, rigged up and sd.

Kellogg Oil Co.'s J. A. Watkins 1, dr 340 ft. Kemp et al's J. & J. Waggoner 1-B, sd 1980 ft. K-M-A Oil Co.'s (K-M-A Field) Munger 17, std 1738 ft. Kimble et al's L. P. Douglass 1, sd 710 ft. Krueger et al's Waggoner 3, lcn.

Ladd & Hannon's Waggoner 1-A, pulling cas 1480 ft. Lewis Oil Corp's W. T. Waggoner 2, sd 200 ft.

McDaniels et al's L. P. Douglass 2, dr 225 ft. McKenna & Moore's W. T. Waggoner 1, sd 2050 ft; Waggoner 2, dr 550 ft. Magnolia Pet. Co.'s J. C. Duke 7-A, dr 800 ft; Geo. B. Ancell 1, moving in timbers; H. & T. C. 56, dr 1200 ft. Mona Marie Trust Co.'s T. W. Roberts 6, dr 660 ft. R. L. Moody's Hearn & Hines 1, sd 310 ft. Mutual Oil Co.'s S. B. Burnett 1, sd 1665 ft.

Noble Oil & Gas Co.'s Woodall 1, dk. Noel et al's Waggoner 1, sd 640 ft.

J. S. Owens' J. F. Mitchell 1, dr 1900 ft. O'Donohoe et al's T. W. Roberts 1, sd 915 ft. J. O'Neil's Waggoner 2, sd 800 ft; Waggoner 4, sd 1000 ft; and Waggoner 5, rigging up.

Pathfinder Synd.'s W. T. Waggoner 1, sd 1100 ft; Burnett 7, sd 1400 ft; Waggoner 10, fsh 470 ft; Waggoner 11, sd 100 ft. Wm. Peoples et al's A. C. Henson 3, sd 1455. Prime Oil Co.'s H. Munger 1-B (K-M-A Field) dr 1500 ft; H. Munger 1-C, dk. Prince Bros.' A. C. Henson 1, sd 1760 ft.

Rotary Drilling Co.'s Allingham 1, sd 980 ft; S. B. Burnett 1, sd 200 ft. Ryan Pet. Co.'s G. E. Nance 9, (K-M-A Field) dr 840 ft.

Shamrock Oil Co.'s W. T. Waggoner 8, dr 1530 ft. Sooner Oil Assn's T. W. Roberts 1, sd 925 ft; Roberts 6, dr 1265 ft. Swan Pet. Co.'s C. A. Peterson 1, sd 2200 ft. Steelsmith & Orth's B. Parker 1, dr 1000 ft.

Texhoma Oil & Ref. Co.'s J. & J. Waggoner 1, sd 1930 ft. Texland Oil Co.'s J. & J. Waggoner 2, sd 710 ft. The Texas Co.'s E. Evert 1, dr 1565 ft; W. T. Waggoner 219, fsh 1795 ft; Waggoner 221, plugging back 1535 ft; Waggoner 226, testing 1925 ft; Waggoner 237, dr 1850 ft; Waggoner 239, dr 1632 ft; Waggoner 240, dr 1850 ft; Skinner 28, dd 1850 ft.

Wakefield et al's Waggoner 2, sd 750 ft. Waggoner & Green's H. Munger 10-C (K-M-A Field) dk. Wichita Pet. Co.'s S. B. Burnett 60, sd 1440 ft; Burnett 72, sd 1400 ft; Burnett 75, sd 1400 ft; Burnett 76, sd 1875 ft; Burnett 77, sd 400 ft

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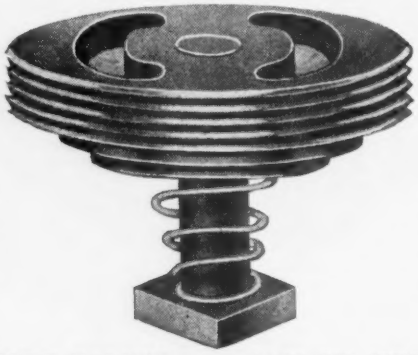
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NORTH TEXAS FIELDS

NORTH TEXAS PRODUCTION

Wichita Falls, Texas, Sept. 12.—The daily average production of the various North Texas fields for the past week is divided as follows:

BURKBURNETT

	Barrels
Magnolia Petroleum Co.	3,170
Kansas & Gulf Co.	1,960
The Texas Co.	1,480
Gulf Prod. Co.	1,430
Humble Oil & Refining Company	1,475
Panhandle Refining Company	690
Oklahoma Pet. & Gas Company	585
McMan Oil Company	585
Texhoma Oil & Refining Company	575
Lewis Oil Corporation	595
Middle State	450
American Refining Company	490
Skelly Oil Company	435
White Oil Corporation	105
Miscellaneous	15,445
Totals	30,950
Last week	29,310

ELECTRA

The Texas Company	6,725
Empire	3,340
Magnolia Petroleum Company	3,160
Hobbs Oil (Middle States)	2,175
Griswold Oil Company	1,080
Gulf Production Company	1,210
Fort Dearborn Oil Company	135
Panhandle Refining Company	105
Humble Oil & Refining Company	95
Miscellaneous	6,365
Totals	25,295
Last week	24,920

MISCELLANEOUS PRODUCTION

Holliday-Archer County	2,700
Kemp-Munger-Allen Field	1,800
Iowa Park	670
Petrolia	300

YOUNG COUNTY PRODUCTION

Roxana Petroleum Corporation	1,190
Ralco Oil Company	950
Penn Cities Oil Company	750
Cosden Oil & Gas Company	575
Fred B. Foster & Company	600
Panhandle Refining Company	520
Seaboard Oil & Gas Company	330
Simms Oil Company	220
Conner et al	275
The Texas Company	400
Godley Oil Company	260
Oklahoma Pet. & Gasoline Co.	250
Eureka Producing Company	230
Elk Basin Consolidated Pet. Co.	220
Emerich Oil Company	210
Betrand et al	200
Miscellaneous	2,820
Totals	10,000
Last week	10,820

Walter D. Cline, prominent independent oil operator, has returned to Wichita Falls from a lengthy vacation spent with his family on a plantation near the town of Amite in Louisiana.

Young County Wildcat Producer Flows 2,500 Barrels After Deeper Drilling

WICHITA FALLS, TEXAS, Sept. 13.—Ranking as the largest deep producer completed to date in the entire North Texas district and definitely opening up a new productive area in Young county, the Halmack Oil Company wildcat test on the J. F. Hall tract increased its flow to 2,400 barrels daily when drilling one foot deeper late last week to a total depth of 4179 feet. This well is located about four miles southeast of the town of Graham in section 86 of the D. R. Akin survey, and its unusually large flush production has proven somewhat of a surprise to its owners and other operators in the district. The well was reported last week making 1000 barrels and three million cubic feet of gas from 4140 to 4178 feet, but increased to 100 barrels per hour and six million feet of gas when deepened one foot. Owing to the amount of open hole along with a heavy gas pressure the well began caving, and production reports from the field early this week credit it with settling to 30 barrels per hour. Pipe Line connections have been made by the Prairie Pipe Line Company, and all oil is being run from the lease. The first gas pay was reported from 4130 to 4138 feet followed by a slate formation to 4175 feet where the top of the oil pay was picked up and drilled into four feet.

Some leasing activity took place soon after the Hall producer demonstrated its real possibilities, but the greatness of the depth of the well is discouraging the operators, as well as the major companies. Whether the Hall well is producing from a new pay is yet to be determined as smaller wells have been brought in at its depth in the Bunger district. Early this year the wild cat test of Casey and Mercier on the Jeffery farm in the Philip Vivian survey about four miles north of Graham showed for a small pumper at 4100 feet.

About four miles east and slightly south of the Halmack big producer the Tuloma Oil Company wildcat test on the A. M. Graham farm is flowing about 100 barrels daily through a bridge formed after shot of 120 quarts from 4215 to 4270 feet. Efforts are being made to clean out the bridge, but the well is not expected to devlop into a large producer owing to the small amount of gas pressure accompanying the oil. In the extreme south part of Young County in the Bunger district and just below the Roark producers, Collett and Okeefe No. 1, I. C. Greenwade is reported making five million feet of gas from five feet of sand picked up at 4240 feet. Drilling has been suspended to move back boiler. Pitzer and West have completed a second test on the Costello Bros. Ranch, located in the J. M. Johnson survey abstract 161 in the southeast corner of Young county, flowing about 200 barrels daily from a 2355 foot sand. The first well was brought in last May pumping 25 barrels at 1825 ft, and marked an important extension to the Bunger district. It is still on the producing list.

Action of the Texas Pipe Line Company in again supplying water to operators in the South Electra field along with a heavy rain last Sunday morning is giving relief to the water shortage that has held development in check for several weeks. During the past week only a small amount of completions were scored, and their initial production as a whole was somewhat below the average while the Texas Company, which is the largest producer in the field, reports a drop in production amounting to 1000 barrels within the past three weeks. This company maintained a daily average of 6,725 barrels last week. Probably the most interesting test being drilled in Wichita County is the Texas and Gulf Production Company No. 1, Mrs. E. Evert, located in the H. D. Collins survey abstract 409 about midway between Iowa Park and the Southeast Burkburnett field. This test is in semi-wildcat territory and is drilling with cable tools below 1475 feet and carrying casing while making hole. It is planned to drill slowly ahead as long as the prospects of picking up a stray sand are good, and the hole may be carried down to the 3000 foot level, since both companies have considerable acreage surrounding the test.

ELECTRA COMPLETIONS.

Company, Well, Location	Initial Production bbls.	Depth
Camp Oil & Gas Co.'s L. P. Douglas 2-A	*	1015
Carter et al's Burnett et al 1	*	1430
Griswold Oil Co.'s S. B. Burnett 8-A	†	1635
Gulf Prod. Co.'s L. P. Douglass 3-B	100	1968
Humble Oil & Ref. Co. W. T. Waggoner 3-A	*	2070
K.M.A. Oil Co. H. Munger 16 K-M-A Field	30	1737
Ladd & Hannon W. T. Waggoner 1-B	*	2020
Magnolia Petroleum Co. H. & T. C. 57	25	1026
Pathfinder Oil Synd. S. B. Burnett 5	65	1425
Prime Oil Corp. H. Munger 4 (K-M-A Field	35	1636
Skelly Oil Co.'s W. T. Waggoner 1	*	2055
The Texas Co.'s W. T. Waggoner 236	110	1915
The Texas Co. W. T. Waggoner 238	100	1975
Waggoner & Green H. Munger 9-C (K-M-A Field)	35	1238

YOUNG COUNTY COMPLETIONS.

Company, Well, Location	Initial Production bbls.	Depth
Dewes & Tuck McClukey 1	*	3610
Mahlstedt Mook Oil Co. J. S. Williams 3-B	350	3045
Halmack Oil Co. J. F. Hall 1	2400	4180
Penn Cities & McGarr . Herron 2	¶15	2575
Pitzer & West Costello Bros. 2	200	2355

BURKBURNETT COMPLETION

Company, Well, Location	Initial Production bbls.	Depth
Duncan & White J. T. Overby 2	*	740

BURKBURNETT DRILLING REPORT.

Bleakley & Kinnison's Rexford 7, dk. Buffalo-Texas Oil Co.'s Parker 1, sd for water 1895 ft. Burkburnett Deep Test

Oil Co.'s J. R. Sullivan 1, dk. Baldwin Bros.' Kennedy 2, dr 1715 ft.

Camp Oil & Gas Co.'s A. F. Dodson 1, lcn. Culberson & Orth's Parker 1, dr 900 ft.

Dixon Synd.'s Roller 2, re-bldg rig, td 785 ft. Jack Dow et al's Horton 1, set cas 1610 ft.

H. A. Erwin et al's Sides 1, set cas 1275 ft. H. R. Ellwood's Nix 2, sd 870 ft.

Grayce Oil Co.'s Daniels 3, cas trouble 1275 ft.

Humble Oil & Ref. Co.'s Schulz 26, dr 1220 ft. L. P. Hammond's Ferguson 1, bailing salt water 1570 ft.

Kansas & Gulf Co.'s Schmisseur 6-A, preparing to dr in 1725 ft.

Lewis-Judson Oil Co.'s L. & M. Dodson 10, run cas 1010 ft; Camp-Dodson 13, dk blown down.

Magnolia Petroleum Co.'s Anderson 12, dr 1080 ft; Dodson 9, lcn; Hugh Reilly 77, dr 1425 ft; Reilly 78, dr 400 ft; Roller 39, 40 and 41, lcns; Staley-Beach 38, lcn; Staley-Beach 39, rigging up star 970 ft; Franklin-Cropper 5, rigging up star 1355 ft. Massey et al's Ramming 1, sd 1455 ft. McNelly et al's Ramming 1, sd 920 ft.

Chas. F. Noble Oil & Gas Co.'s Woodall 1, dr 1350 ft.

Patton et al's Waggoner 8, sd 1875 ft. Progessive Production Co.'s Roller 13, sd 1035 ft. Wm. Priddy's C. Birk 8, preparing to dr in pay 1655 ft; Birk 9, testing 1845 ft. Birk 10, set cas 1820 ft.

Stump Oil & Gas Cropper 10, sd 1405 ft; Cropper 11, sd 1260 ft. J. I. Staley's fee 1, sd 1860 ft. Swan Petroleum Co.'s Peterson 1, preparing to dr to 2500 ft, td 2135 ft.

Texhoma Oil & Ref. Co.'s Mrs. M. J. Powell 24, dr 1275 ft. The Texas Co.'s Evert 1, dr 1475 ft.

YOUNG COUNTY DRILLING REPORT.

Andrede et al's W. W. Storm 1, dr 100 ft.

Barnes Prod. Co.'s G. F. Parsons 1, sd 100 ft. Bertrand et al's Whittenburg 3, dr 2005 ft, passed through sand at 1875 ft good for about 50 bbls; Wergess 1, co to shoot 3040 ft. Brahaney Bros.' I. R. Grantham 1, dr 2010 ft. C. W. Brooks' S. L. Ribble 1, sd 4080 ft. Buchanon et al's Whittenburg 1, dr 2360 ft. Burton & Burton's River bed 1, dr 2100 ft. H. Byren's Mahoney 1, swedging cas 3935 ft.

Canadian Pacific Oil Co.'s McBrayer 1, sd 2500 ft. Collett et al's T. C. Greenwade 1, making 2,000,000 ft gas 4245 ft. Colpenn Prod. Co.'s J. L. Rhodes 1, dr 2280 ft; Rhodes 2, dr 75 ft. Cosden Oil & Gas Co.'s J. M. Askew 4-1, dr 1890 ft. Crawford & Harrison's J. Kisinger 1, testing 3045 ft, estimated 15 bbl well.

Detroit Mexia Oil Co.'s J. T. Cotton 1, dr 3550 ft. Duquesne Oil Corp.'s R. M. Williams 1, dr 80 ft.

Elk Basin Consolidated Pet. Co.'s J. A. Driver 11, dk.

Fred B. Foster & Co.'s L. L. Durham 1, dr 3970 ft; G. F. Parsons 1, dr 2800 ft; G. F. Parsons 2, dr 705 ft.

Gulf Production Co.'s Grantham 1, dr 3580 ft; Grantham 2, dr 3600 ft; and J. M. Askew 2, dr 2865 ft.

Hemphill et al's W. A. Corbett 1, sd 3460 ft. Geo. Herney's School lot 1, lcn. L. C. Heydrick et al's Church lot 1, ur 2275 ft.

C. A. Julian et al's I. R. Grantham 1, dr 940 ft.

Leader Oil Co.'s M. R. Jarnagin 1, sd 2726 ft. Lewis et al's C. Grantham 1, lcn.

McKinzie Oil Co.'s T. C. Greenwade 1, sd 3975 ft. Maden & Maden's F. Herron 1, shot 40 qts 2990 to 3015, no results, td 3020 ft. Mahlstedt Mook Oil Co.'s R. M. Williams 4-A, straightening hole 1310 ft; J. S. Williams 2-B, dr 2650 ft. Mann et al's Whittenburg 4, sd 1870 ft. Miller, Horner et al's F. Herron 3, fsh 2500 ft. D. Miller's F. Herron 1, dr 1140 ft. Monroe Oil Co.'s J. M. Askew 3, lcn; Mary Cox 1, dr 2550 ft; Jefferies 1, set cas 2000 ft; G. F. Parsons 1, ur 2670 ft; G. Stewart 1, sd 50 ft.

Nash & Windfohr's R. M. Williams 2, set cas 1240 ft; Williams 3, dr 1000 ft. North American Ref. Co.'s B. F. Scott 8, dr 1900 ft; W. M. McCow 1, dr 2240 ft.

Ohio Fuel Oil Co.'s A. Grimshaw 1, dd 2750 ft. O'Tex Oil Co.'s G. F. Parsons 1, dr 925 ft.

Penn Cities Oil Co.'s F. Herron 3-A, dr 515 ft; Herron 3-B, co after shot 2415 ft., estimated 100 bbl well; Herron 1-D, dk; Herron 2-D, lcn. Prairie Oil & Gas Co.'s W. W. Storm 1, dr 1040 ft.

Ralco Oil Co.'s Roark 3, dk; J. A. Driver 8, dr 2450 ft; Driver 9, dr 75 ft. Revere Oil Co.'s J. L. Bratcher 1, dr 450 ft; Costello Bros. 1, dr 4030 ft; Costello Bros. 2, set cas 2000 ft. Roxana Pet. Corp.'s E. N. McCluskey 1, dr 3880 ft; W. C. Bunger 1, dr 2220 ft; Whittenburg 1, straightening hole 2280 ft; and B. F. Scott 6, dr 2810 ft.

Shamrock Oil Co.'s J. A. Driver 1, dr 1400 ft. Simms Oil Co.'s A. L. Lynn 2, dr 3860 ft. Sinclair Oil & Gas Co.'s J. Kisinger 1, sd 3360 ft. Snowden & McSweeney's J. J. Shirley 1, repairing dk 2925 ft. Southland Oil Co.'s J. Hughes 1, sd 3030 ft; F. Herron 1, rig. Leslie Spoontz' Askew 1, sd 2125 ft. Spoontz et al's O. D. Lisle 1, sd 3300 ft. Standard Petroleum Co.'s McBrayer 1, fsh 3770 ft. Sun Co.'s Whittenburg 1, dr 2840 ft; C. E. Ferguson 1, dr 1710 ft.

Tex-Northwestern Oil Co.'s Wilson-Copeland 1, dr 815 ft. The Texas Co.'s J. Jones 2, dr 2130 ft; Jones 3, rigging up; Jones 4, dr 1060 ft. Tuloma Oil Co.'s A. M. Graham 1, flowing 100 bbls co after shot 4275 ft. C. R. Tyrell Oil Corp.'s J. S. Williams 1-C, dr 2600 ft; Williams 2-A, dd 2700 ft; Williams 3-A, ur 1380 ft; Williams 4-A, rigging up; Williams 5-A, lcn; Williams 6-A, dk; Williams 7-A, set cas 1425 ft; Williams 8-A, dk; Williams 9-A, dk; Williams 10-A, dk; River Bed 1, dr 2000 ft; R. M. Williams (Acct. 1) 1, dr 1130 ft; J. A. McLaren 1, dk.

Union Oil Co.'s J. M. Askew 2, dr 250 ft; I. R. Grantham 1, dr 2250 ft.

Wells & Spellings' F. Herron 2, dr 1810 ft; H. P. Young 1, dk. Whitehead et al's F. Herron 1, dr 730 ft; Herron 2, dr 2700 ft. Whitehead & Tidwell's F. Herron 1, lcn.

Young County Drilling Co.'s A. E. Foster 1, dr 3625 ft.

Burkburnett, Texas, Sept. 12.—Vigorous protest on the part of oil operators and companies owning producing properties within the townsite of Burkburnett against an order issued recently by the city council that all derricks must be reduced to 40 feet in height resulted in the edict being revoked. Charging that the tall derricks are a menace to public safety the council had begun steps to force the shortening of prescribed height.

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—side reaming; std—standardizing; sw—salt water td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig

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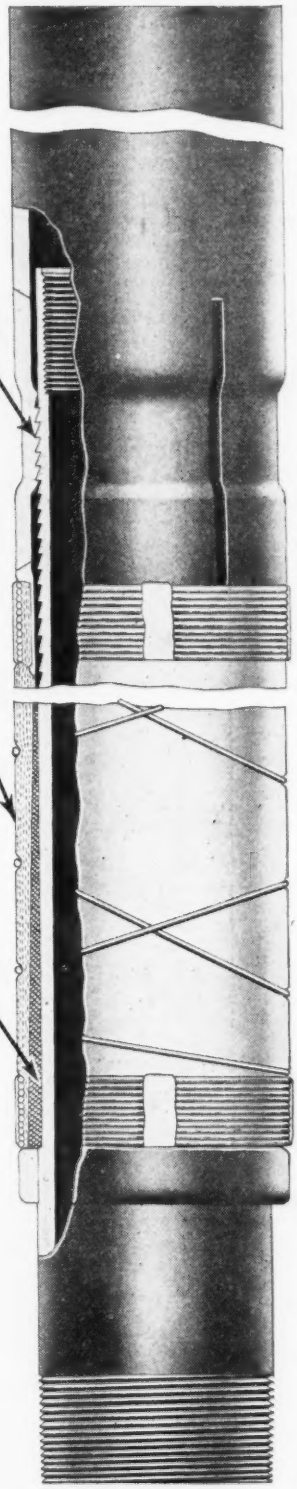

Point 1— Ratchet Threads

These are left hand buttress threads and being shallow cut, do not weaken the pipe to any extent, preventing the packer from uncollapsing when exposed to high gas pressure. They can be unscrewed and thus partially release the packing if it is desired to pull the packer.

Point 2— Canvas Packing

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Point 3— Cone Lead

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Permits For New Wells in Texas

Austin, Texas, Sept. 12.—Notices of locations furnished the Oil and Gas Division of the Texas Railroad Commission during the past week for new wells to be drilled in the state follow:

Archer County—The Texas Co., well No. 7, NE cor C. J. Chance lease, 314.6 acres, S. P. RR. Co. survey No. 1, start September 7 to drill 1800 ft; well No. 8, 500 ft from the N and E lines of the C. J. Chance lease, J. A. Garrison survey, abstract 1098, start September 10 to drill 1800 ft. C. S. Lumbley and E. M. Sanderson, well No. 1, NE cor McCall & Sanderson lease, McCall & Sanderson survey, start September 2 to drill 700 ft. The Ky. P. Co., well No. 9, SE cor W. H. Taylor lease, H. H. Kirk survey, start September 10 to drill 1700 ft; well No. 6 same lease, start Sept. 2, to drill 1605 ft. W. C. Parker et al, well No. 4 on N line 2nd location from E line J. L. Jackson lease, block 5, League 3, DCSL survey, to start Sept 9 to drill 825 ft. J. J. Pipes et al, well No. 1, NW cor E. J. Netherton lease, S. P. RR. No. 1 survey, start September 7 to drill 2000 ft.

Atascosa County—Gulf Production Co., well No. 5 on W line 2nd location from N line L. M. Caruthers lease, E. Stover survey 736, to start September 12 to drill 1800 feet. Grayburg Oil Co., well No. 5, near center of D. Heickman lease, Toribia Viastrigo survey, start August 24; well No. 1, near center of southern line of L. F. Heickman lease, Taribia Viastrigo survey, start August 10.

Bexar County—J. E. Eggers, well No. 8, NE section of Klemcke Heirs lease, Klemcke heirs survey, to start September 1 to drill 1500 ft. Grayburg Oil Co. well No. 16, near center of east line of A. F. Earnst lease, W. C. Brown survey, start August 2 to drill. Somerset Crude Oil and Refining Co., well No. 3, near center of north line of Herman Schmidt lease, Francis Rolen survey, to start September 5 to drill 1200 ft. Toronto Gray Oil & Gas Assn.'s well No. 2, NW corner Kate Nix lease, N. M. Dawson survey, to start September 14 to drill 1200 ft. Burr & DeLaven, Duffy & Perrenat's well No. 4, center of eastern end of Pablo Gonzalles lease of 17 acres, survey No. 54, start August 29, to drill 1300 ft.

Brazoria County—Hyde Prod. Co.'s well No. 1, SW corner Belle Wisdom lease, A. Darst survey, to start about September 7 to drill about 3600 ft. Croesus Oil Co.'s well No. 1, own lease, well located in NE cor S. F. Austin survey, start September 3 to drill 3000 ft. Freeport Sulphur Co.'s well No. 2, NW corner Seaborn Estate, J. E. Groce survey, to start September 3 to drill 5000 ft.

Brown County—Panhandle Lease Pool's well No. 4, near center of north line of D. S. Camp lease, S. H. Battan survey, start September 1 to drill 450 or 500 ft. Walla-Walla-Texas Oil Co.'s well No. 1, NW cor Mrs. M. Drinkard & Kitty Drinkard lease, survey No. 277, to start August 28 to drill 600 ft.

Callahan County—C. B. Cook's well No. 1, SW cor Joe Newman lease, D. & D. A. Lands survey, start September 5. Pennant Oil & Gas Co.'s well No. 2, center of west line of B. W. Webb 160 a. lease, E. H. Brooks survey, started September 3 to drill 2500 ft. J. W. Hayes' well No. 1, NW cor J. H. Cunningham lease, University Lands survey, start August 28 to drill 325 ft.

Cooke County—J. W. Donehoo's well No. 1, near center of southern end of Bettie Gunter 717 a. lease, Jno. McKerley survey, start September 1 to drill 3000 ft.

Comanche County—A. R. Forster's well No. 1, near center of west line of W. H. Hale lease, B. S. & F. survey, start September 5 to drill 350 ft.

Eastland County—Barney Carter, well No. 3, N. W. corner J. W. Langford lease, Mm. Maxwell survey, to start Aug. 24 to drill 2000 ft. W. S. Dougherty, well No. 1, N. E. corner Jacob Lyerla lease, H. & T. C. RR. Co. Survey, start Sept. 4 to drill 3400 ft. States Oil Corp., well No. 2 S. E. corner S. C. Bond lease, section — Block 4 H. & T. C. survey, to start Sept 11 to drill 3000 ft.

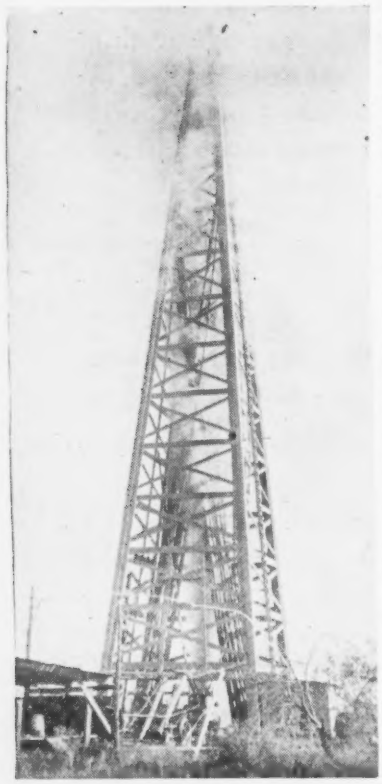
Fort Bend County—Gulf Production Company, well No. 3, east line of B. J. Wheat et al 1358 A. lease, Michael Young League survey, start Sept. 9 drill 3100 ft. Gulf Production Co., well No. 2, S. W. part Bassett Blakeley "B" lease, E. Drew survey, to start Sept 10 to drill 2800 ft.

Freestone County—A. C. Smith et al, well No. 1, S. W. part John Bounds lease, Richie survey, to start Sept. 10 to drill 3100 ft.

Hardin County—Charles Paggi, well No. 1 N. E. part Jno Hammon lease, Mary E. Hopkins survey No. 2, to start Sept 12 to drill 1400 ft.

Kaufman County—Humphreys Oil Co., well No. 1, S. E. corner J. H.Fox et al lease, P. H. Pearson survey, start Aug. 15 to drill 3700 ft.

Limestone County—Revere Oil Company, well No. 1, SE. Cor. T. B. Bratton lease, Geo. Gentry survey, block 1 and 2, Sept. 5 to drill 3760 ft. Magnolia Petroleum Co., well No. B5, J. L. Thompson lease, L. Varela survey, to deepen starting August 22—. well No. 4, Joe Ross lease, P. Varela survey, to deepen starting August 22—. Trapshooter Dev. Co., well No. 4, NW corner Mrs. R. V. Bounds lease, Eli Hillhouse survey, start September 5 to drill 3100 ft. Humphreys Oil Company, well No. 2 northwest corner of J. W. Tatum lease, Pedro Varela survey. Started August 31, 1922 to drill 3200 ft. Well No. 2 SW corner W. D. Pittman lease of 60.2 A., Pedro Varela survey, start August 31, 1922 to drill 3200 ft. Well No. 1, SW corner of Lee Dorsett lease, Pedro Varela survey, start August 28, 1922, to drill 3200 ft. U. S. Tex Oil Corporation well No. 5 near center of west line of A. W. Anderson lease, P. Varela survey, to deepen starting August 30 to drill 3210 ft. Humphreys Oil Company, well No. 1, SW corner W. D. Allen lease, Flippen survey start September 6 to drill 3750 ft. Well No. 2, near center of north line of W. C. Wilson lease, Pedro Varela survey start September 10 to drill 3150 ft. Well



The Frances Oil Company's No. 1 well near Kingsville, Texas, making an estimated flow of 40,000,000 cubic feet of gas per day

Pipe Line for Magnolia Petroleum Company in Central West Texas being laid by Buckeye pipe laying machine

No. 11, SE. section of Henry Heirs 192173 A. lease, P. Varela survey, start September 10 to drill 3100 ft. Well No. 1, near center of north line of H. F. & W. F. Bassett lease, Flippen survey, start September 10 to drill 3750 ft. Kosse Chief Oil Syndicate, well No. 1 at center of 3 acre tract, W. F. Foy town of Kosse, to start September 18 to drill 4000 ft.

Liberty County—Yount-Lee Company well No. 3, NW section A. and W. W. Merchant lease, Jesse Devore league survey, start, now drilling to go 3500 ft. Gulf Production Company, well No. 2, SE corner of David Hannah 100 a. lease, Jesse Devore survey, start September 2, 1922 to drill 2400 ft. Houston Production Company, well No. 1 Amel Abel lease SW. corner J. Devore survey, to start September 14, to drill 2500 ft. Well No. 2 NW corner same lease, date and depth. Republic Production Company, well No. 5, NE corner David Hannah lease, J. Devore survey, to start September 12 to drill 2250 ft. Monarch Oil and Refining Company, well No. 1, NW corner L. C. Christian lease, Jesse Devore League Laura Ables 66 a. tract, start September 8 to drill 2500 ft.

Matagorda County—L. F. Hudson Trustee, well No. 1 near center of A. H. Wadsworth lease, J. W. Byrne survey, to start August 31 to drill 4000 ft.

Medina County—Adams, Bitting & Groves, well No. 1, in south center Kate Crusturner lease, Jno. Ward survey 18, to start August 28, to drill 1000 ft.

Milam County—S. A. Guiberson, Jr., well No. 2, SE corner L. N. Posey lease, Rebecca Moore League survey, to start September 3 to drill 1300 ft. Frederick C. Nelson, well No. 1, SW corner C. A. Lafere lease, J. J. Acosta survey, to start September 15 to drill 3000 ft.

Montgomery County—J. B. Hewitt, well No. 1, SW corner G. W. Madeley lease, L. Y. Folson survey, to start September 10.

McCulloch County—Jeff Meers Oil Company, well No. 3, SW corner Zelle Heirs lease, H. & T. C. RR. Co. survey, start September 8, to drill 400 ft.

McLennan County—F. S. Dibble, well No. 1, near center of south line of Guy McNamara lease, Tomas De La Vega survey, McLennan Co. start August 14, 700 ft.

Panola County—The Texas Company, well No. B-3, near center of north line of T. C. Adams lease, Isom Hatcher survey, start "at once".

Parker County—Duquesne Oil Corp., well No. 1, N.. corner Emma Mankin lease, survey No. 35, start July 26 to drill 4000 ft.

Palo Pinto County—Sivalls et al, well No. 1, SE corner J. H. Robinson lease, section 66 block 3 T. & P. Ry. survey, to start September 10 to drill 1600 ft. Yukon Oil & Gas Company, well No. 1, in SNE corner L. E. Seaman lease, G. B. & C. N. G. Ry Co. survey, to start September 9 to drill 4000 ft.

Schleicher County—The Paragon Oil Company, well No. 1, near the center of the west section of B. M. Boyd lease, G. H. & S. A. RR. Co. survey, block H, start Sept. 15 drill 3000 ft.

Stephens County—Tex-O-Wa Oil Syndicate, well No. 2, NW corner R. Q. Lee lease, T. & P. survey, to start August 28, to drill 3200 ft. A. M. Donnelly et al, well No. 1, NW corner E. H. Shipley lease, T. & P. RR. Company survey, start July 11 to drill 3200 ft.

Navarro County—Newblock Oil Co., of Texas, well No. 5, SW corner Mattie Bounds lease, W. H. Smith survey, to start September 3 to drill 2990 ft. Humphreys Oil Company, well No. 5, SW corner Mattie Bounds lease, W. H. Smith Heirs survey, start September 1, to drill 3100 ft. Humphreys Oil Company, well No. 3 on W line 4th location from S line Mattie Bounds lease, W. H. Smith survey, to start September 9 to drill 3050 ft. Seay-Cranfil et al, well No. 2, NW corner C. S. West lease, —survey, to start September 8 to drill 650 ft. Newblock Oil Company of Texas, well No. 7, near center of west line of Mattie Bounds lease, W. H. Smith survey, start September 12 to drill 2980 ft. Panhandle Refg. Co., well No. 3, on E line 1050 ft from N line, C. S. West lease, M. Boren survey, to start September 10 to drill 3200 ft.

Shackelford County—J. H. McGilliss, well No. 1, S. W. corner Mrs. Augusta Mason lease, University lands survey, to start September 10 to drill about 600 ft. The Texas Company, well No. 7, NE section of J. H. Arnold lease, University lands survey, start August 28 to drill—.

Tarrant County—Erie Oil & Drilling Company, well No. 1, on center of N line R. L. Cartwright lease, Wm. Huff survey, to start September 15 to drill 3750 ft.

Webb County—Aviation Oil Company, well No. 2, NW corner Puig Brothers lease, A. L. Edgington survey, to start July 30th to drill 1800 ft. Well No. 1, same lease as above, in the SW corner to start May 9 drill 1800 ft. Witherspoon Oil Company, well No. 3 NW corner

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Shot of 20 Quarts in Jack County Deep Test Makes 100-Barrel Well

WICHITA FALLS, TEXAS, Sept. 12.—The deep wildcat producer of the Roxana Petroleum Corporation on the J. R. Williams farm, located in Block 88, B. S. & F. Survey, about 10 miles southwest of the town of Jacksboro in Jack County, was shot last week with 20 quarts from 4550 to 4565 feet resulting in a flow of oil amounting to 100 barrels daily through a bridge formed at 4510 feet. This test began flowing early last June after drilling five feet into a sandy-lime pay at 4557 feet, and later swabbed and flowed as much as 230 barrels daily. Efforts are now being made to clean out the bridge, and it is expected that a much larger shot will be placed in the hole shortly.

This well has produced approximately 10,000 barrels of oil to date, and same is now in storage on the lease in gas-tight bolted steel tanks. The Roxana Corporation erected a battery of 25 tanks with a capacity of 500 barrels each several months ago, and will probably have to construct additional tankage shortly. Although a main trunk line of one of the major pipe line companies is within ten miles of the producer, pipe line connections have been put off pending the final outcome of the well.

The Williams well is the only deep producer in Jack County, and present indications are that it may be produced from the same formation that has been picked up to the south in Palo Pinto County on the Dalton ranch, and in the east half of Young County.

The Herbert Oil Company of Ft. Worth is rigging up to drill a wildcat test on the Bruce Banks farm in the southwest corner of Block 73 of the Matagorda School Lands Survey in Wise County. This test is to be drilled with cable tools, and contract has been let for a 3500-foot hole.

Laredo Oil Co. lease, survey No. 592, start September 10 to drill 1675 ft. Nueva Oil Company, well No. 1, SW corner G. W. Killam lease, survey 602, to start September 7 to drill 1600 ft. W. C. Paulton, well No. 1, NW corner tract 49 Edrington sub-div Ping Ranch, Albercas Grant, to start September 8 to drill 1800 ft. A. E. Aaronson, well No. 3 on W line 900 ft. from N. line E. Garcia 80 acre lease, survey 2253, to start September 10 to drill 1610 ft. Schott Oil Company, well No. 9, NW corner sub-div 4 E. Garcia lease, section 54, to start September 11 to drill 1600 ft. Mirando Production Company, well No. 2, SE corner E. Garcia 20 acre lease, survey 2084, to start September 12 to drill 1600 ft.

Wilbarger County—A. A. Griffith, well No. 1, SW corner Harrold Petroleum Oil Co. lease, H. & T. C. Ry. Co., survey, to start September 11 to drill 1000 ft. Magnolia Petroleum Company, well No. 1, SE corner G. E. Ancell lease, H. & T. RR. Co. survey, start September 4 to drill 2500 ft.

Williamson County—Magnolia Petroleum Company, well No. 71, SW section H. A. Stiles lease, Daniel Kimbrough survey, start September 15 to drill 3500 ft.

Wichita County—Gulf Production Company, well No. B-4, NE corner L. P. Douglas lease, H. & T. C. RR. Co. survey, start September 3 to drill 1950 ft. The Little Syndicate, well No. 11, NW section of T. J. Cole lease, McCool-Munden farm, to start September 4, to drill 200 ft. F. L. Boroff, well No. 1, NE corner M. A. Barwise lease, Jas Cole survey, to start September 5 to drill 1850 ft. Fred B. Foster & Co., well No. 1, near center of north line of Lizzie H. Throckmorton lease, J. F. Torrey survey, start July 30 to drill—. Magnolia Petroleum Company, well No. 80, SW corner Hugh Reilly lease, L. C. Dennison survey, start September 5 to drill 900 ft. Brannan and McArthur, well No. 9, SE section of L. P. Douglas lease, H. & G. N. RR. Co. survey, start September 1 to drill 290 ft. Pat Oil Company, well No. 4, NW corner L. P. Douglas lease, H. & T. C. survey, start September 4 to drill 1960 ft. Jefferson Oil and Gas Co., well No. 3, John & Jeff Waggoner 40 acre lease, G. H. & H. survey, to start September 4 to drill 1500 feet. John O'Neil, well No. 5, NE corner Rio Bravo Oil Company lease, H. & T. C. RR. Company survey, start September 5 to drill 2000 ft. Rio Bravo Oil Company, well No. E-3 Fee, center of eastern line of own lease, H. & T. C. RR. Co. survey, start August 30 to drill—. Well No. E-10 Fee, same lease as above to start August 27 to drill 1950 ft. Well No. A-5 fee, same lease as above, start August 27 to drill 1950 ft. The Clover Oil Co., well No. 3, near center of W. T. Waggoner 81 acre lease, block 5, section 34, H. & T. C. Co survey, start September 1 to drill 1640 ft. G. R. Hoge, well No. 3, center of own 60 a lease, W. V. F. Lands survey, start September 5, 1922 to drill 175 ft. Carter Petroleum Company, well No. 1, near center southern line of J. A. Fisher lease, H. & G. N. survey, to start September 1 to drill 2000 ft. Pumper Oil Company, well No. 1, SE corner Fred Daume lease, S. P. RR. Co. survey, start August 28, 1922 to drill 1000 ft. Inland Oil Company, north end of Mrs. B. Parker 50 acre lease, McCool survey, start September 7, to drill 900 ft. Camp Oil and Gas Company, well No. 1, SW corner A. T. Dodson lease, R. Hinisly survey start September 7 to drill 1500 ft. Hudspeth, Widner & Kellog, well No. 1, NW corner Watkins lease, Watkins survey, start September 9 to drill 2000 ft. Well No. 1, NE corner L. S. Denny lease, L. C. Denny survey, start September 9 to drill 1000 ft. Charles William Wallace, well No. 12, NE corner W. J Logan et al lease, J. A. Kemp, W. V. F. Lands survey, start September 5 to drill 2000 ft. Humble Oil and Refining Company, well No. B-4, near center of E line of W. T. Waggoner 50 acre lease, H. & T. C. RR. Co. survey, start September 4 to drill 2000 ft. A. F. Sibley et al, well No. 14, center of south line of L. I. & H. M. Munger 20 a. lease, W. V. F. L., start September 10 to drill 1620 ft. Griswold Oil Corp., well No. 31, 300 ft E of No. 25 Burnett-Lloyd lease, section 6 S. B. Burnett survey, to start September 10 to drill 2000 ft. Well No. 30, 300 ft NE of No. 18, same lease, date and depth. Well No. 13, 300 ft. S of No. 10, same lease, date and depth. Ross & Webb Drilling Co., well No. 8, 50 ft S of No. 2 Tom Burnett lease, J. F. Torrey survey, No. 2, to start September 2 to drill 794 ft.

Young County—Monroe Production Company, well No. 1, NE corner Graham P. Stewart lease, T. E. & L. Co. survey, start August 31 to drill 1000 ft. Julian Brothers, well No. 1, SW corner I. R. Graham lease, to start September 3 to drill 3800 ft. Roxana Petroleum Company, well No. 2, SE corner J. N. Boozer lease, Garrett survey, to start September 15 to drill 3500 ft. Mutual Oil Company, well No. 11, NW corner J. A. Driver lease, G. L. Aynesworth survey, to start September 12 to drill 3600 ft.

Zapata County—Mexican Oil Company, well No. 1, SW sub-div 16 F. M. McKeig survey 307, to start September 12.

A Buckeye Ditcher at work on a line for the Magnolia Petroleum Company in the Central West Texas District

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Brothers Oil Company Secures 2000 Barrel Well in New Currie Section

MEXIA, TEXAS, Sept. 12.—At least temporarily diverting the attention from the spectacular developments at Kosse and Richland, the new Currie district of the Mexia field was again bidding for honors in the present excitement this week with a new completion making 2000 barrels.

The Brothers Oil Company's No. 1 Bounds at Currie found the sand at 2970 feet and has been completed for 2000 barrels of clean oil. The same company also completed No. 1 Bounds in Freestone County which was abandoned after failing to show for a producer at a total depth of 3490 feet.

Another completion in the Currie section of fair size during the week is credited to the Humphreys-Texas Company in No. 2 Mattie Bounds which is flowing 610 barrels from a total depth of 610 feet.

In the vicinity of the Seay-Cranfil wildcat producer near Richland in Navarro County a number of companies are preparing to start tests and during the past week between six and eight new locations have been staked. The discovery well, which was credited with an initial flow of around 5000 barrels, is now down to 300 barrels a day and it is reported that it will be taken deeper in an effort to revive production. At the time the well came in it was only a few inches in the sand found at 2987 feet. The oil is of 41 gravity.

At Kosse work is beginning to take on a shape befitting the boom which was heralded immediately after the bringing in of the Jones discovery well. According to field reports covering this district for the week approximately 15 new rigs are now standing in the field.

Although the number of completions in the Mexia and Currie districts was far greater last week than for any seven day period for the past two months, production for the two fields failed to show a proportional increase, however, the daily average of both districts for the past week was better than 75,000 barrels, or a gain of about 3000 barrels over the previous week. The Mexia field proper is credited now with a daily average of 64,000 barrels while the Currie section is maintaining an average of 11,610 barrels.

Twenty-seven wells were reported in the completion list last week of which 10 were producers and 17 dry holes. The producers had a combined initial production of 1500 barrels with the exception of the 2000 barrel well of the Brothers Oil Company.

MEXIA PRODUCTION

Mexia, Texas, Sept. 11.—The daily average production of the Mexia field for the past week was divided about as follows:

	Barrels
Humphreys	23,900
Humble Oil & Refining Company	5,250
Magnolia Petroleum Company	3,900
Gulf Production Company	4,960
Simms Oil Company	3,370
Atlantic Oil Company	3,000
Danciger Oil Company	2,680
J. K. Hughes	2,300
Kirby Petroleum Company	1,315
Wichita Petroleum Company	550
Miscellaneous	12,775
Total	64,000

CURRIE PRODUCTION

Mexia, Texas, Sept. 11.—The daily average production of the Currie field for the past week is divided about as follows:

	Barrels
Humphreys	3,560
Newblock Oil Company	3,100
Snowden & McSweeney	1,600
J. K. Hughes	1,470
Homaokla Oil Co.	1,300
C. N. Cranfill et al	300
Sun Company	250
Trapshooter Oil Company	30
Total	11,610

MEXIA COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Kirby Pet. Co. Nussbaum 1-B.	*	3060
Danciger Oil & Ref Co:		
Hughes 2	40	3080
Sherrer 2-B	60	3065
Humble Oil & Ref. Co.:		
Berthelson 21-W	110	3025
Berthelson 37-W	250	3080
Manning 1	50	3100
Rogers 18	110	3100
Blake Smith 3	210	3090
Mexia Lone Star, Hardin 1	*	3135
Mexia Robinson Synd. Robinson 1	*	2950
Parker Oil Co. Desenberg 9	*	3230
Patrick Iron Wks Robinson 1.	*	2965
Richardson, Jackson & Walford Ross 1	*	2135
Walsh Robinson 1	*	940
Limestone County—		
L. L. Donnell Trustee, Boshara 1	6	680
McCormick-Mexia Co. Speight 1	*	3595
G. W. Tucker Co. Keys 1	*	3135
Freestone County—		
Brothers Oil Co. Bounds 1	*	3495
C. D. Neff Trustee, Stubbs 1	*	3040
Sewell & Baer, Smith 1	*	2180
Navarro County—		
Gulf Prod. Co. R. V. Bounds 1	*	2885
Humphrey-Texas Co., Mattie Bounds 2	610	2960
McGraw 4	60	2960
McAlester et al Livingston 1	*	3165
J. J. Peterson et al Pursley 1	*	2425
Trapshooter Dev. Co. Bounds 1 T. W.	30	2945
Providence Pet. Co. Simms 1	*	3230

MEXIA DRILLING REPORT

Humble Oil & Ref. Co.'s Freeman 2, spudded and sd; Berthelson 36-W, reset cas and sd 3080 ft; Haggard 3, set liner to test 3060 ft; Henry 4, dk; 6, lcn; Kendrick 1-A, lcn; 12, fsh 3085 ft; Kimbell 5, lcn; Kimbell (Will) 4, lcn; Rogers 14, rig on ground; Hester Ross 3, set cas 2910 ft.

Humphrey-Mexia Co.'s Thomas 22, lcn; Thomas 23, lcn; Thomas 24, lcn.

Kirby Pet. Co.'s Freeman 7-A, fsh 2945 ft.

Magnolia Pet. Co.'s Thompson 12-B, sd 2960 ft. Mexia Calif. Co.'s Stroud 1, sd 3215 ft. Mexia Fish Pond Synd.'s Holton 1, dr 3100 ft.

Peterkin's Hughes 1, lcn abn.

J. K. V. Shaffer et al's Roller 1, sd 2365 ft. Skinner-Bennett's Scott 1, dk.

Tennessee-California's Hardin 1, sd 3215 ft. Texas Co.'s Stroud 2, coring 3075 ft.

World's Wonder Oil Co.'s Arbuckel 1, sd 2695 ft.

Limestone County

Aldrege et al's J. E. Bounds, 1, dk abn. Atlantic Oil & Pet. Co.'s Gunther 1, fsh 3065 ft; Champion 1, sd 2500 ft.

Battersby & Kyzer's Herring 1, dr 1900 ft.

Chappell et al's Kirby 1, sd 3130 ft.

Dallas-Mexia Co.'s Allen 1, sd 670 ft. Danciger Oil & Ref. Co.'s Cook 1, dk. Daturna Oil Synd.'s Askew 1, fsh 3145 ft. Arthur Davedore's Baker 1, sd 1485 ft.

Galloway Oil & Ref. Co.'s Curry 1, sd 1795 ft. Grogas et al's Gordon 1, co 3070 ft.

Iron Clad Oil Synd.'s Gill 1, sd 3045 ft. Limestone Co. Leasing Synd.'s Moody 1, set cas 2855 ft.

Majors Trust Synd.'s Hancock 1, sd 2300 ft. Mexia Red Seal Synd.'s Cook 1, set cas 3470 ft. Mexia Simmons Oil Synd.'s Simms 1, dr 3200 ft. Mexia Wonder Pool's Whitcomb 1, sd 2135 ft.

Perry & Trustee's Bounds 1, sd 2950 ft.

J. B. Shummell's Jones 1, sd 3730 ft.

Tate et al's Favors 1, sd 3260 ft. Tenn-Mexia Oil Co.'s J. B. Bounds 1, sd 3230 ft. Texas Cent. Oil Synd.'s Cook 1, sd 3165 ft. Texas Mexia Synd.'s Matgsiak 1, sd 3250 ft. T. & P. Coal & Oil Co.'s Browder 1, sd 2995 ft.

Big Williams Oil Co.'s Lewis 1, fsh 2975 ft.

Yuder et al's Priddy 1, dr 2460 ft.

Freestone County

Abernathy et al's Gillam 1, dr 4625 ft. Bentley & Mahone's Gilpin 1, dr 1325 ft.

Dillon, McGraw & Rickard's Stubbs 1, sd 3100 ft. Dugges & Glazier's Brooks 1, sd 995 ft.

J. H. Leamond et al's Colbert 1, dr 3525 ft.

Mexia Teague Oil & Gas Co.'s Teague T'Site 1, sd 2095 ft. Mike Healy Pool's Daniels 1, fsh 3535 ft.

O. K. Oil & Gas Co.'s Knight 1, repairing dk 3620 ft.

F. E. Pope et al's Smith 1, sd 3495 ft. Root & Knipley's Young 1, sd 1395 ft.

The Thad McClain Co.'s Green 1, sd 2145 ft. Trapshooter Riley Oil Co.'s Couch 1, sd 3190 ft.

Smith & Swift Bounds 1, dr 425 ft.

Navarro County

Baker et al's Davis 1, sd 2170 ft.

Atlantic Gulf Pet. Co.'s Hamilton 1, dr 3465 ft.

Big Four Oil Co.'s Akers 1, fsh 3045 ft. Brothers Oil Co.'s Bounds 1, std 3045 ft; Bounds 2, dk; Bounds 4, set cas 2900 ft; Bounds 5, dr 2530 ft.

Campbell, Pick's Owens 1, rebuilding dk. Columbia Co.'s Lawrence 1, sd 1500 ft; Wilkes 1, dk. Compass Oil Co.'s

County Farm 1, sd 2845 ft. Corsicana Deep Well Co.'s Burk 1, sd 2550 ft. Cor-Tex Oil Co.'s Gray 1, sd 4142 ft. Cosden Oil & Gas Co.'s Pounds 1, coring, shows oil 3210 ft.

Duncan & Johnson's McEntire 1, rigged up and sd.

Erwin et al's John Ralson 1, dr 2625 ft.

C. J. Flanigan et al's Swink 1, sd 3040 ft. F. F. F. Oil Co.'s Moody 1, sd 2690 ft.

Gilbert & Hunter et al's McCline 1, sd 3030 ft.

J. R. Hill's Stubbs 1, sd 2885 ft. Homokla Oil Co.'s McGaw 5, dk abn; McGaw 4, set casing 2915 ft. Houston Oil Co.'s Bounds 1, taking core 3200 ft. Hughes & Harmon's Griffin 1, sd 835 ft. J. K. Hughes Devel. Co.'s McGaw 5, sd 2955 ft. Humphrey Texas Co.'s Cole 5, lcn abn; English, dr 3185 ft; McGraw 5, fsh 3090 ft; Price 1, co 3235 ft. Humphreys Texas Co.'s Singleton 1, rigging up tools 3550 ft; Tyner 1, r 3250 ft.

Marr & Bell's Wright 1, sd 1925 ft.

Gilbert S Johnson's Albritton 1, set casing 3215 ft.

McCormack-Mexia Synd.'s Swink 1, sd 2500 ft.

Newblock Oil Co.'s Bounds 4, rigging up.

Mexia Wortham Equit. Synd.'s Fortson Bros. 1, dk.

O'Connor et al's Bounds 1, dr in 2910 ft.

Ranger Vindicator Oil Dev. Co.'s Thornton 1, r 3195 ft.

Seaport Pet. Co.'s Vinson 1, fsh 3000 ft. Seay & Cranfill's Hardy 1, set casing 2990 ft. Security Drillling Co.'s Ferrell 1, sd 2100 ft. Snowden & McSweeney's Longbottom 3, std 2880 ft.

Trapshooter Devel. Co.'s Bounds 1, lcn; Bounds 2, sd 2965 ft; T. W. Bounds 2, set casing 2890 ft; R. V. Bounds 1, set casing 2885 ft; R. V. Bounds 2, dr 2465 ft; W. O. Bounds 11, produced 10 bbls and sd 2950 ft.

Varley et al's Keiph 1, fsh 3010 ft.

Wafer Oil Co.'s Wilkes 1, sd 1800 ft. J. H. White et al's Fortson Bros. 1, sd 1100 ft.

First Well Drilled in Galicia by Hand in 1854 About 200 Feet Deep

The Journal of the Institution of Petroleum Technologists (London) for July contains an excellent article by Albert Millar on the Galician oil fields. The paper contains a mass of information and several full-page photogravure illustrations as well as maps and sections. Since the publication is not easily available to most OIL WEEKLY readers, the following digest may be of interest:

The oil industry of Galicia dates from 1810 when Hosepf Haecker and John Mitis produced a distillate resembling kerosene out of the oil seepages, near Hubice. The first real refinery was constructed in 1852 and produced lamp oil in commercial quantities. In 1854 the first well was dug by hand at Bobrka and opened up one of the most productive fields. The holes were 200 to 300 feet deep, and all were dug by shovelling the dirt into baskets and hauling it up over a windlass to the surface.

In 1862 a crude sort of drill was introduced, and by means of this holes were put down to depths of 800 feet. A Scotchman, named MacGarvey, introduced the first Canadian drilling system in 1884. Since that time altogether 170 different oil fields have been opened up. Of these only about 80 are being worked at present. The more important fields are at Boryslaw and Tustanowice.

The geological formations of the Boryslaw-Tustanowice fields consist of Miocene shales, gray clays, and gypsum beds; Oligocene clays, shales, and sandstone beds; and Eocene green shales and sandstones. The oil sands occur in the upper Oligocene, upper and lower Eocene. Commonly there are three oil horizons.

The structure of the oil fields is extremely complicated consisting of overturned anticlines and thrust faults, and many of the producing wells appear to derive their oil from fissures and crevices produced by the faulting. The amount and duration of the production depends upon the extent to which the sandstone is broken up.

At the present time water is invading the Galician fields and production is steadily declining, and nearly all the oil has to be treated by different processes to break up the emulsion and remove the water.

The production of the Boryslaw-Tustanowice-Mraznica fields from 1898 to 1921 is given in the following table:

Year	Metric Tons
1908	1,553,180
1909	1,916,180
1910	1,612,460
1911	1,300,710
1812	1,026,940
1913	900,160
1914	738,020
1915	610,090
1916	849,290
1917	789,220
1918	773,856
1919	696,980
1920	625,558
1921	563,566

The oil ranges from 28.5 to 34 degrees Baume and contains 15 per cent to 40 per cent benzine and 20 to 35 per cent kerosene.

BAKU, RUSSIA, FIELDS PRODUCE 266,000 TONS IN MONTH OF JULY

Moscow, Russia, Sept. 5.—Production of crude oil in the Baku fields of Russia during the month of July amounted to 266,000 tons as compared with 254,000 tons in June, according to a Moscow paper.

Imports of petroleum and its products into the country during the same period totaled 475,000 tons.

London, England, Sept. 6.—The Anglo-Persian Refinery in England has announced the receipt of approximately 12,239,000 barrels of crude oil from Persia. The oil reached Swansea between August 5 and 8. This is the largest quantity of crude ever received there in a four day period.

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Lull in Gulf Coast Fields Prolonged; Current Completions Only Small Wells

HOUSTON, TEXAS, Sept. 12.—With late developments failing to show any results other than the usual run of wells, the quiet which hung over the Texas Gulf Coast fields last week has been prolonged another seven days. In the absence of large producers or anything that could border on the spectacular, interest has been confined throughout the past week to the Orange field where two gas wells of unusual size have been blowing wild.

The Humble Oil and Refining Company's No. 8 Chesson came in late last week with a heavy flow of gas and a spray of oil, tearing down all connections and running wild. The well was estimated to be one of the largest gassers yet completed in the field. The well had reached a total depth of 4100 feet but the gas pressure came through the casing from a higher depth. At last reports the well was still making considerable gas with about 250 barrels of oil.

The Chesson 8 is approximately 150 yards from the famous Chesson 5, which ranks as the largest producer completed at Orange and which really started the boom in that Gulf Coast district.

Following in the steps of Chesson 8, the same company's Winfree 6 broke loose at 4015 feet with a heavy flow of gas and is running wild. At first the well flowed only dry gas but now a spray of oil and b. s. is coming up with the gas.

The various Gulf Coast fields accounted for 19 completions during the past seven days of which 18 were producers and the only remaining well was a wildcat test which drilled into salt and was abandoned. Orange, Hull, West Columbia, Humble, Sour Lake, Damon Mound, Pierce Junction, Goose Creek and Spindle Top were the fields contributing the producers.

At Goose Creek the Crown Oil and Refining Company brought in a good well on the Gillette lease. The company's No. 7 well for this tract making 400 barrels at 1878 feet.

The Houston Production Company's Abel 1 in the Hull field which was completed for 650 barrels was the largest well reported for the entire district during the week. Production was found at a total depth of 2050 feet.

In the same district the Humble Oil and Refining Company's Guedry 15 tested salt water Saturday at 3350 feet and is temporarily shut down waiting for instructions to go deeper.

The Gulf Production Company has started another well in the Big Creek field of Fort Bend County. The well is the company's No. 3 for the Wheat farm. The original producer for the field, the Gulf's No. 1 Wheat, is still making around 60 barrels a day.

TEXAS GULF COAST COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Orange—		
Brownie Babbette Oil Co.'s McLean 6	260	3360
Orange Pet. Co.'s Winfree 7	135	3375
Sun Co.'s Brown 1	300	4200
Gulf Prod. Co.'s Hager Fee 8	225	3375
Humble Oil & Ref. Co.'s Chesson 16	125	3415
Hull—		
Houston Prod. Co.'s Abel 1	650	2050
Republic Prod. Co.'s Dolbear 11	100	2180
West Columbia—		
Hyde Prod. Co.'s Sun Leggett 2	80	2610
Southern Pet Co.'s Wilson 1	235	2300
Crown Oil & Ref. Co.'s Melgard 3	75	3485
Humble—		
Texas Co.'s Burt 50-A 17	225	2770
Sour Lake—		
Texas Co.'s Fee 268	50	1910
Tom Barkley's Carpenter 3	35	905
Damon Mound—		
Sinclair Oil & Gas Co.'s Mock 1	110	3119
Pierce Junction—		
Humble Oil & Ref Co.'s Dooley T. X. 9	80	3918
Goose Creek—		
Gulf Coast-Crown Oil's Gaillard 16	100	2905
Crown Oil & Ref Co.'s Gillette 7	400	1878
Spindle Top—		
Tyson & Wherry's Trembly 3	10	850

HUMBLE PRODUCTION

Houston, Texas, Sept. 11.—The average daily production for the Humble field for the past week was distributed about as follows:

	Barrels
The Texas Company	3,695
Galena Signal Company	1,350
Invincible Oil Company	275
Czreaux & Martin	250
Southern Petroleum Company	150
Crown Oil and Refining Company	100
Humble Oil & Refining Company	100
Gulf Coast Oil Corporation	50
Bradley Brothers	30
Trinity Oil Corporation	50
Miscellaneous	655
Total	6,705
Last week	6,895

HUMBLE DRILLING REPORT

Texas Co.'s Stevenson 26, bailing with show of oil, 2985 ft; Stevenson 23, to r 2750 ft; Landslide 237, sdtr 2330 ft, td 2630 ft; Landslide 236, preparing to sdtr 3090 ft; Koehler 24, wo, to sdtr 3150 ft; Koehler 32, to perforate casing 5050 ft.

Crown Oil & Ref. Co.'s Herman 61, dr 969 ft.

HULL PRODUCTION

Houston, Texas, Sept. 11.—The average daily production in the Hull field during the past week was distributed approximately as follows:

	Barrels
Republic Production Company	5,500
Gulf Production Company	5,640
Higgins Oil & Fuel Company	1,700
Yount Lee Oil Company	1,700
Humble Oil & Ref. Co.	1,500
Houston Production Company	1,500
Empire Gas & Fuel Company	600
Monarch Oil & Ref. Company	520
F. H. Carpenter, Trustee	475
The Texas Co., (Royalty)	240
Crown Oil & Ref. Company	10
Miscellaneous	15
Total	19,400
Last Week	20,335

HULL DRILLING REPORT

Empire Gas & Fuel Co.'s Barrow 2, dr 4055 ft.

F. H. Carpenter trustee's Stengler 2, dr 1670 ft.

Gulf Prod. Co.'s Scarborough 9, dr 3200 ft; Scarborough 11, dr 2450 ft; Morris Phillips 15, dr 3170 ft; Hannah 2, dr 1200 ft.

Higgins Oil & Fuel Co.'s Merchant 2, dr 2900 ft; Merchant 3, dr 1750 ft.

Houston Prod. Co.'s Barngrover 7, dr 3410 ft; Abel 2, dr 550 ft.

Humble Oil & Ref. Co.'s Hooks Spell 10, lcn; Marshall 1, setting up; Guedry 15, sw 3350 ft; Taylor 1, trying to set cas 2250 ft; Merchant 1, dr 2585 ft; Abel 1-A, dr 1125 ft; Crosbie 1, bldg dk; Abel 1-B, dr 1275 ft; Abel 2-B, setting up.

Link Oil Corp.'s Rivers 1, dr 2275 ft.

Republic Prod. Co.'s Dolbear 56, dk; Dolbear 10, rigged to wo; David Hanna 4, dr 2210 ft; David Hanna 5, dr 510 ft.

Yount Lee Oil Co.'s Merchant 2, dr 1875 ft; Stengler 3, dr 2125 ft; Stengler 4, dr 1810 ft.

Fusom Dev. Co.'s Pickett 1, sw 875 ft, sd.

Monarch Oil & Ref. Co.'s Abel 1, rig.

T. W. & P. Oil Co.'s Carr 5, dr 470 ft.

DAMON MOUND PRODUCTION

Houston, Texas, Sept. 11.—The daily production for Damon Mound for the past week is divided approximately as follows:

	Barrels
Sinclair Oil & Gas Company	2,270
Southern Petroleum Company	375
Humble Oil & Ref. Company	200
Hyde Prod. Company	200
Total	3,045
Last Week	3,325

DAMON MOUND DRILLING REPORT

Sinclair Oil & Gas Co.'s Bryan 27, preparing to test 3150 ft, td 3566 ft; Masterson trustee 3, dr with show of oil 1465 ft; Williams 5, dr 2260 ft; Masterson 15, rigging up; Jackson 14, preparing to fsh 3290 ft.

Southern Pet. Co.'s Japhet 1, sd 4000 ft; Bryan 4, sdtr 3000 ft.

Hyde Prod. Co.'s Gibson 2, dr 1925 ft; Kitterell 1, dr 1570 ft; Wisdom 1, lcn.

SOMERSET COMPLETION

Company, Well, Location	Initial Production Bbls.	Depth
Glasscock Leasing Synd's Curtis 10	....	

SOMERSET DRILLING REPORT

Blue Bonnet Oil Co.'s Tootsky 2, dr.

Duffy, Delavan & Perrenot's Gonzales 4, cemented 1100 ft; Dobrowolski 2, lcn.

Grayburg Oil Co.'s Ed Wells 1, bailing; Ernst 15, dr 1570 ft; 16, bailing; 17, dr 1190 ft; Ernst 20, lcn; F. L. Heickman 5, dr 1620 ft; Morgan Williams 2, dr 580 ft; Hartung B. 5, dr 1106 ft; Hartung A. 7, dr 1407 ft; Shaw 10, dr 1792 ft; 11, bailing; Tex-Carruthers-Morrison 1, dr 1830 ft; Muennink 9, lcn; G. W. Carruthers 20, dr 305 ft; D. Heickman 5, dr 777 ft; Ila Carruthers 12, dr 603 ft; Ruby Gray 1, bailing; John Carruthers 2, dr 400 ft; Tex-Carruthers 1, dr.

Gulf Prod. Co.'s Gulf 3, bailing; 4, rigging up; 5, lcn.

Glasscock Leasing Synd.'s Klemcke 11, rigging up; 12, lcn.

Beaucamp Pet. Co.'s Tuerpe 2, rigging up.

Helvetia Copper Co.'s Roger Smith 1, set liner; Taylor 2, set liner.

Johnson Bros.' Nestroy 4, dr 500 ft; 5, spudded in.

Jackson Co.'s Smith 7, dr.

Ed Leach et al's Carruthers 1, sd; Ben Carruthers 3, lcn.

Leonard Oil Co.'s Kurz 4, lcn.

Medina Oil & Gas Assn's Barker 4, lcn.

Hobson & Voorhees' Surtees 3, dr.

Martin Bors.' Lambert 2, dr.

Lain Oil Co.'s Seffell 1, dr.

McClure et al's Eggers 8, dr 500 ft; Carruthers 6, rigging up.

Marathon Oil Co.'s Brown 7, dr.

New England & Texas Oil & Ref. Co.'s Smith 2, dk.

Empire Oil & Fuel Co.'s Surtees 4, lcn.

Richards et al's Tuerpe 1, dk.

Somerset Mission Oil Co.'s Carruthers 5, lcn.

W. E. Rutledge's Swearingen 1, dk.

Southex Dev. Co.'s Winans 1, lcn.

Southwestern Prod. Synd.'s Carruthers 2, sd.

Toronto-Gray Oil Co.'s Nix 2, cemented.

Val Verde Oil Co.'s Long 18, dr in.

Witherspoon Oil Co.'s S. E. Ricks 2, cemented.

ORANGE PRODUCTION

Houston, Texas, Sept. 11.—Daily average production in the Orange field for the past week was approximately as follows:

	Barrels
Gulf Production Company	4,800
Humble Oil & Ref. Company	3,100
Amerada Pet. Corporation	1,600
Hamilton Oil Corporation	1,550
Brownie Babbette Oil Company	1,050
Edgerly Pet. Company	975
Orange Pet. Company	600
Sun Company	585
Atlantic Oil Company	425
Monarch Oil & Ref. Company	350
Supreme Oil Company	150
Sinclair Oil & Gas Company	140
Gulf Coast Oil Company	100
Miscellaneous	40
Total	15,465
Last Week	16,855

ORANGE DRILLING REPORT

Humble Oil & Ref. Co.'s Chesson 15, lcn; 12, 4015 ft; 8, wo, running wild; Winfree 6, spraying gas and oil; 7, lcn; Aronson 2, setting cas 4135 ft; Tasco 1, wo, testing 3205 ft.

Amerada Pet. Co.'s States 1-A, sanded up, wo 3275 ft; 3-A, fsh 3800 ft.

Brownie-Babbette Oil Co.'s McLean 5, new hole, dr 1250 ft; 8, blew out, oil and sand, wrecked dk, sanded up 4030 ft; 9, dk; Pevito 4, (dd), dr 3550 ft.

Edgerly Pet. Co.'s Carbello 9, set screen 3350 ft, bailer stuck.

Gulf Coast Oil Co.'s Leon 4, dk.

Hamilton Oil Corp.'s Chesson 1, dd, dr 3970 ft; 2, dd 4145 ft; 5, set 3-inch screen 4050 ft; 9, dk.

Orange Pet. Co.'s Winfree 1, cemented casing 3150 ft; 8, dr 575 ft; Chesson, rigging up.

Sun Co.'s Belile 2, dr 3675 ft; Minor, to wo; Gunstream 3, dr 2825 ft.

Sinclair O. & G. Co.'s State 1 "A", dr 3595 ft.

Thrift Oil Co.'s McGuire 2, rigged to wo.

Supreme Oil Co.'s Jackson 2, dd, 3525 ft.

L. C. Barrett's Winfree 1, dr 500 ft.

Gulf Production Co.'s Winfree Fee 6-A, sw 3800 ft; Hager Fee 7, dr 3450 ft; Hager & Moore 7, bldg stand rig 3330 ft; Kishi Laug 3 "A", dr 3210 ft; Carrie Brown 1, dr 3400 ft; Chesson 5, dr 3330 ft; McGuire 1, rigging up.

SOUR LAKE DRILLING REPORT

Texas Co.'s Fee 243, bailing with show of oil 2770 ft, td 2834 ft; Fee 289, milled out cas at 1495 ft, td 2210 ft.

Lake Oil Co.'s Herbert 22, dr 1855 ft.

Gulf Prod. Co.'s Tarver 51, dr 2110 ft.

Thy Oil Co.'s 2, set screen to pump 1050 ft.

BARBERS HILL DRILLING REPORT

Humble Oil & Ref. Co.'s fee 2, lcn; fee 3, lcn.

Mills Bennett's Chambers County 2, dr 2570 ft; Japhet 1, cementing cas 2350 ft.

United Pet. Co.-Oricle Synd.'s Richardson 8, dk.

Texas Co.'s Scott 1, dr 3570 ft.

Oil Is Building Town at Somerset And Many New Homes Are Planned

SAN ANTONIO, TEXAS, Sept. 11.—A half dozen years ago the little town of Somerset was a wide place in the road, a couple of stores, a half dozen houses and an uncertain road into San Antonio. It was surrounded by a rich agricultural region, water being the chief lack. With red, sandy soil on its hills, the melons, plums, peaches and blackberries it grew were famous all over this district.

Today due to oil, Somerset is rapidly developing into a model little city hence much interest attaches to announcement that George Noyes Evans has bought from Dr. F. L. Thomson, president of the Grayburg Oil Company, the 100 some odd lots that form the townsite and will launch a development campaign there. It is said more than 100 new homes are to be built in Somerset to take care of the demand of field workers for dwellings. Somerset already has several dozen pretty little homes, half a dozen stores, a hotel, lumber yard, several garages, three or four cafes, a bank, post office and cotton yard. It has a broad, hard paved highway direct to San Antonio with all streams bridged and in perfect repair. Moreover it has a small forest of derricks in a half circle about it and is the center of extensive activities over an area of several miles.

C. L. Witherspoon has piped gas into Somerset from one of his wells. Mr. Evans and associates have just chartered a water supply company to give the city an adequate supply of pure, clean water. Most home owners still drill their own wells or pipe water from the wells of neighbors. The little city's streets are being improved and a modern lighting system is adding to the comforts of the inhabitants.

In the field this week, there were no unusual developments. Four new wells with average production were put on the pump. There are 48 wells drilling with 58 rigs in the field, some of which are moving. There are sixty-eight locations with probably thirty new derricks up or building.

GOOSE CREEK PRODUCTION

Houston, Texas, Sept. 11.—The average daily production for the Goose Creek field for the past week was divided approximately as follows:

	Barrels
Gulf Production Company	7,300
Humble Oil & Ref. Company	5,700
Crown Oil & Refining Company	475
The Sun Company	350
Turnbow Oil Corporation	335
Gulf Coast Oil Company	260
C. B. Japhet Oil Co., formerly Southerland Oil Company	100
Miscellaneous	250
Total	14,770
Last Week	14,745

GOOSE CREEK DRILLING REPORT

Humble Oil & Ref. Co.'s Gaillard 49, dk; Gaillard 50, setting up; Smith-Simms 33, sd 4110 ft; Smith-Simms 46, dr 4150 ft; Smith-Simms 43, sd 4180 ft; Isenhour 1-A, dr 3935 ft; 2-A, dr 2800 ft; 1-B, dr 4505 ft; Schilling 32, dr 4260 ft; Gaillard Pahn 25, testing 4205 ft; Sweet 25, dr 3435 ft; Beaumont State 10, dr 2900 ft; Harrell 2, dr 2950 ft.

Gulf Coast Crown Gaillard 36, shutting off water 3307 ft.

Butler Perry et al's Grace Adey 4, sd 2675 ft; Bryan 3, set strainer 4240 ft.

Higgene Oil Corp.'s Scorrega 1, dr 3250 ft.

Turnbow & Pierman's Dolan 6, dr 1500 ft.

Gulf Prod. Co.'s Chapman Bryan 3, dr 4430 ft; 4, dr 2450 ft; Gaillard 15, dr 3760 ft; 16, dr 2225 ft; Isenhour 6, dr 4800 ft; Houston Smith 7, dr 2600 ft; Hirsch State 1, dr 2600 ft; Black Duck Bay State 1, dr 3150 ft.

Sun Co.'s Smith 6, wo.

Ship Channel Oil Co.'s Atkinson Island 2, fsh 650 ft.

STANDARD DRILLING
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TOO—
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CROWN BLOCKS
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Magnolia Reported Soon to Drill First Well in Shott Pool Area

LAREDO, TEXAS, Sept. 11.—According to reliable reports, the Magnolia Petroleum Company will shortly spud in its first well in the Webb-Zapata district in Block 11, Scott Pool area not far from the big Kanoka well. The Magnolia recently leased 160 acres there and is reported prepared to test out the district thoroughly since the Kanoka has demonstrated that 1,000 barrel wells are possible in this pool. Recently a party of Magnolia officials inspected this field and are said to have decided that the Magnolia should drill at several points immediately. Two rigs are being hauled to the Magnolia lease, a rotary and a combination. The Dixie is already drilling in this pool.

Killam Condren No. 5 in the original Mirando pool came in for 100 barrels last week. This company was organized a year ago by a couple of boys just out of high school in Laredo. It has five producers on its 40 acre lease with this well. The Kanoka Oil Company's No. 2 is preparing to drill in and is expected to make a better well than the No. 1 which is the best well in the field thus far.

R. O. Barnsley, fee owner of the Barnsley ranch in which are located the big gassers, of the Carolina Texas Oil Company, announces a new syndicate to be known as the Barnsley Syndicate holding acreage in various pools along the Escarpment and considerable wildcat acreage. They plan to drill at once but have not announced their location although they have 15 tracts.

The Mirando Production Co.'s No. 1 Tommie Scott, Garcia, is holding up well and the No. 2 will be started soon. This is a new entrant in the Mirando territory and the company announces it plans several wells.

MIRANDO DRILLING REPORT

WEBB COUNTY—Big Bear Oil Co.'s Garcia 1, dr. Dixie Oil Co.'s No. 1 Brackenridge, lcn. Marathon Oil Co.'s No. 1 Brackenridge, sd. McKenzie et al's No. 1, dr. Carolina-Texas Oil Co.'s No. 5 Barnsley, lcn. Carnahan Prod. & Ref. Co.'s No. 5 Garcia, dr. Hood Hill et al's No. 1 Ojuelos, dr below 300 ft. Ross Jones et al's Nos. 1 Barnsley, dr 2000 ft; 2, lcn. A. D. J. Oil Co.'s No. 1, dr 2200 ft Burton Gunn et al's No. 1 Garcia, rigging up. Rincon Pet. Co.'s No. 1, sd. Brennan & Leonard's No. 1, dk. Porcion Oil Co.'s No. 1 Gonzalos, dr 860 ft (corrected report). Laredo Oil Co.'s No. 3 Garcia, sd 1663 ft. Leaseholders Oil Co.'s Nos 1 Killam, sd; 1 Gates, sd; 2 dr. South Plains Oil & Gas Co.'s Nos. 1 Coffield, dr below 1600 ft; 1 Cushing, dr below 800 ft; 1 Moon, dr 1750 ft; 1 Wormser, fsh; 4 Brackenridge, swabbing. The Oil Well Drilling Co.'s Nos. 1 and 2, rigging up. Sacramento-Rio Grande Prod. Co.'s No. 1 Hammer, dr 1990 ft. Olson Oil Co.'s No. 2 Boyd, reported making 140 bbls. Zapata-Memphis Co.'s No. 1, spudded in. Mercedes Drilling Synd.'s No. 1, dr 1150 ft. Seacord Oil Co.'s No. 1 Dillard, dr 2300 ft. Rincon Pet. Co.'s No. 1 Reiser, fsh. Cole Pet. Co.'s No. 2 Grant, dr. Mirando-Texas Co.'s No. 1, dk. Ross et al Nos. 1 Killam, rigging up; 2, sd; 3, dr. Mirando Prod. Co.'s No. 1 Garcia, testing at 1600 ft. Kanoka Oil Co.'s No. 2 Garcia, dr 1523 ft.

ZAPATA COUNTY—Community Oil Co.'s No. 1 Haynes, dr 690 ft. Killam Condren No. 4, dr. Ohio Fuel Co.'s No. 1 Allen, lcn. Thiac & Green's No. 1 Haynes, dr. Texas Mexican Oil Co.'s No. 1 Garcia, dr 1040 ft.

BLUE RIDGE DRILLING REPORT

Niels Esperson's Ewing 1, dr 4300 ft.

Texas Co.'s Robinson 9, sdtr 3460 ft, td 3500 ft.

Gulf Prod. Co.'s West Schenck 3, dr 2800 ft.

MISCELLANEOUS PRODUCTION OF THE TEXAS GULF COAST

Houston, Texas, Sept. 11.—The average daily production for the miscellaneous Texas Coastal fields for the past week was distributed as follows:

	Barrels
Sour Lake	4,450
Somerset (S. A.)	3,100
Mirando (Zapata County)	3,000
Saratoga	1,660
Blue Ridge	1,325
Batson	1,152
Spindle Top	810
Barbers Hill	800
Nacogdoches	100
Markham	100
Dayton	65

STRATTON RIDGE DRILLING REPORT

Freeport Sulphur Co.'s Dannenbaum-Tolar 10, dr 2250 ft; Dannenbaum-Tolar 9, wo 4368 ft; Seaburn 2, dr 500 ft.

Fairchild Oil Co.'s Boggs 1, dr 3960 ft.

Empire Gas & Fuel Co.'s Wilson 1, dr 3125 ft.

Holmes Oil Co.'s McDonald 1, rigging up.

DAYTON DRILLING REPORT

Humble Oil & Ref. Co.'s Pruitt 4-A, sdtr, td 2270 ft; Pruitt 5-A, dr 1750 ft.

North Dayton Oil Co.'s Jones 2, lcn; Grandberry 2, sd 1815 ft.

Beaumont Oil Co.'s Josey 1, sd 1700 ft.

Sapp et al's Peterson 1, dr 4150 ft.

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¢—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—side reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

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Jacksonville, Fla.
Galveston, Texas

France Plans Fuel Station at Papette

Los Angeles, Cal., Sept. 9.—Edouard Rivet, newly appointed governor general of the Society Islands, said in San Francisco this week that France will immediately spend $15,000,000 for a fueling station at Papette, Tahiti, for the use of her ships plying between Bordeaux and Indo-China, and will draw the fuel oil from California. Papette is the port made famous by O'Brian in his "White Shadows of the South Seas," where there is little occasion for clothes, and where the natives are especially beautiful.

It was recently reported that the Shell interests are substituting California oil for the oil they have formerly obtained in Mexico to supply some of their foreign demand.

Last week the Sun Company of Philadelphia loaded a 70,000 barrel cargo of Long Beach crude for its Philadelphia refinery, and will make regular purchases of California crude from the new fields of this state. The Swiftsure Company will send its tanker, Swift Star, from the Atlantic Coast for a cargo of California crude soon. Japanese shipping companies are taking additional fuel from this coast.

Dry Hole Not a Tragedy

To the Editor:—

Your last copy starting with "Still they come" meaning "one born every minute," and ending with what the steno says was "Fresh Air" instead of "free air," would be burned at the stake were it not for the fact that a few records of our own successes redeemed it.

Now see here. If our own best paper feels that way toward a dry hole what can we expect of Denison lawyers and simple minded bankers who can see only far enough to grab what some fellow has made instead of going out and constructively making some of their own.

They tell me the oil enterprise costs three hundred million annually and repays seven hundred million. Better than two hundred per cent. How much more do you want? Best known returns and no room for further argument.

Dry holes? Sure, what of it? A dry hole costs the nation nothing. Get that and get it hard for its the big argument in favor of oil as an enterprise. COSTS NOTHING. If a house burns down property having value is lost, it may not be an individual loss because of insurance but its a national loss just the same. If you put a few thousand into a stamp mill at a mine uplangone and the mine doesn't pay you're out. It might as well have burned so far as net results to the nation are concerned, it's a property loss. But a dry hole? Nix. You pull your casing, move your rig, the derrick oozes into fence and barn material and the only loss is the so-called labor loss and I suspect that fed somebody's babies. Of course it could be considered a loss even then but so is cutting my hair and yours—I catch a boob doing it every few days and the stuff grows right out again—labors lost. No Sir, from the standpoint of national economics the dry hole is not a tragedy but represents a distinct blessing to everybody. Money is useless unless used and its only value is in its use and the dry hole used a little without any national loss whatever.

Cordially yours,
NICOLLE

Farmers & City Man'r Oil Co.
Blooming Grove, Texas

New Petroleum Reserves Being Sought in Italy

Rome, Italy, Sept. 2.—Oil experts of the Ministry of Agriculture of Italy are making geological investigations throughout the country in an effort to find a sufficient supply of petroleum to free the country of its dependence on foreign oil, according to a statement made public here.

During the 11 years between 1910 and 1921 the country consumed approximately 4,000,000 tons of petroleum and by-products as against a production of 75,000 tons.

At present the country is producing oil at the rate of about 5,000 to 6,000 tons annually while consumption amounts to about 400,000 tons a year.

New York, N. Y., Sept. 12.—Among new companies organized in the United States during the month of August, according to figures compiled by the New York Journal of Commerce, Oil and Gas concerns lead the list with a combined authorized capitalization of $100,166,000. This figure compared with $141,544,000 for the same period in 1921.

Pittsburgh, Pa., Sept. 9.—The Eureka Pipe Line Company, one of the principal gathering systems in the eastern fields, has announced that it will accept all oil runs during the month of September and if business conditions continue as at present all runs will be made during October.

New York, Sept 12.—Oil is to be substituted for coal as fuel in the Yonkers electric power plant of the New York Central Railroad. Installation of the oil burners has already begun. The Yonkers is the largest plant of the New York Central within its electrified zone.

WEST COLUMBIA PRODUCTION

Houston, Texas, Sept. 11.—The average daily production for the West Columbia field during the past week was divided approximately as follows:

	Barrels
The Texas Company	19,470
Humble Oil & Ref. Company	4,700
Gulf Production Company	1,100
Hyde Production Company	850
Southern Pet. Company	600
The Sun Campany	225
Crown Oil & Ref. Company	175
Monarch-Stribbling	60
Total	27,180
Last Week	28,590

WEST COLUMBIA DRILLING REPORT

Texas Co.'s Hogg 37, 4160 ft; Hogg 31, sdtr from 2715 to 2730 ft, td 3065 ft; Hogg 71, sd 3740 ft; Hogg 74, waiting for cement to set 4480 ft; Hogg 76, dk; Hogg 78, dr 3495 ft; Abrams 8, sdtr and waiting for cement to set 3580 ft, td 3595 ft; Abrams 9, cored 3590 ft; Abrams 10, setting up.

Humble Oil & Ref. Co.'s Japhet 9, dr 2985 ft; Japhet 34, dr 3750 ft; Bullock Nash 2, dr 3225 ft; Badge 1, bldg std rig 3505 ft; Badge 2, dk; Wilson 1, dr 3585 ft; Wilson 2, lcn; Melgard 4, dk.

Crown Oil & Ref. Co.'s Melgard 4, lcn.

Hyde Prod. Co.'s Sun-Leggett 4, setting up.

Wichita Pet. Co.'s Smith 2, bldg standard rig 3510 ft.

Helm et al's 2, dr 3460 ft.

Kavanaugh et al's Strip 1, set screen 3520 ft.

Gulf Prod. Co.'s Eyres 7, dr 2860 ft.

Atlantic Oil Co.'s Wilson 1, dr 1400 ft.

Continental Oil Co.'s Old Ocean 1, set 6-inch 3400 ft, dr 3450 ft.

PIERCE JUNCTION PRODUCTION

Houston, Texas, Sept. 11.—The daily average production for the past week is divided approximately as follows:

	Barrels
Gulf Production Company	630
Snowden & McSweeney	500
Sun Company	225
Humble Oil & Ref. Company	200
Total	1,555
Last Week	1,260

PIERCE JUNCTION DRILLING REPORT

Humble Oil & Ref. Co.'s Dooley, dr 3525 ft; Dooley 5, lcn; Whitehead 2, dr 4135 ft; Fitzsimmons 4, dr 325 ft.

Sun Co.'s Whitehead 1, sdtr 3275 ft.

Myers et al's Myers 1, dr 4030 ft.

Texas Coast Oil Co.'s Settegast 1, dr 4500 ft.

Gulf Prod. Co.'s Taylor 13, dr 1250 ft.

SPINDLE TOP DRILLING REPORT

Amerada Pet. Corp.'s McFadden, dr 3185 ft.

SARATOGA DRILLING REPORT

Gulf Prod. Co.'s Mayo 1, dr 3370 ft.

Lon Bernard Oil Co.'s 15, setting screen 2050 ft.

BATSON DRILLING REPORT

Kirby Pet. Co.'s Millhome 10 Strip, dr 2590 ft.

Skinner Prod Co.'s Henry 2, bailing sw and some oil 1245 ft.

Gulf Prod. Co.'s Bates 17, dr 750 ft.

East Batson Oil Co.'s Lone Acre 9, dr 350 ft.

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Wichita Falls, Texas
Breckenridge, Texas
Houston, Texas
Mexia, Texas
Bartlesville, Oklahoma
St. Louis, Missouri

HAYNESVILLE PRODUCTION

Shreveport, La., Sept. 11.—The average daily production for the Haynesville field in Claiborne Parish for the past week was divided approximately as follows:

	Barrels
Ohio Oil Company	22,415
Gilliland Oil Company	7,660
Louisiana Oil Ref. Corp.	7,150
Roxana Petroleum Corporation	2,260
Smitherman & McDonald	1,870
Standard Oil Company	1,805
Amerada Petroleum Corporation	1,365
Gulf Refining Company	1,285
Simms Oil Company	1,090
Humble Oil & Refining Company	1,075
Palmer Trust	815
Transcontinental Oil Company	675
LeVert Oil & Gas Company	675
Houston Oil Company	500
Ziegen et al	485
D. C. Richardson	475
National Refining Company	450
W. H. C. Oil Company	410
Belchic & Laskey	400
Federal Petroleum Corporation	300
V. K. F. Drilling Company	290
Owl Oil Company	285
Tarver & Murphy	225
Arkansas Natural Gas Company	215
Miscellaneous	1,520
Total	55,695
Last week	58,550

BELLEVUE SHALLOW FIELD

Shreveport, La., Sept. 12.—The average daily production in the Bellevue Shallow Field in Bossier Parish for the past week was divided approximately as follows:

	Barrels
Standard Oil Company	2,510
Gulf Refining Company	1,400
Humble Oil & Refining Company	1,300
R. L. Autrey	1,000
Louisiana Oil Ref. Corp.	725
R. O. Roy & Company	410
Chandler & Collins	175
Total	7,520
Last week	7,060

BULL BAYOU PRODUCTION

Shreveport, La., Sept. 12.—The average daily production for Bull Bayou field for the last week was approximately as follows:

	Barrels
Gulf Refining Company	1,600
The Texas Company	1,030
Fortuna Oil Company	1,010
Continental Asphalt Company	585
Standard Oil Company	185
Sinclair Oil Corporation	120
Simms Oil Company	20
Miscellaneous	1,490
Total	6,040
Last week	6,150

ELM GROVE PRODUCTION

Elm Grove 1,220

CADDO PRODUCTION

Shreveport, La., Sept. 12.—The average daily production for Caddo Parish last week was approximately as follows:

	Barrels
Gulf Refining Co.	2,975
Standard Oil Company	1,875
The Texas Company	1,430
Dixie Oil Company	790
Fortuna Oil Company	535
Louisiana Oil Ref. Corp.	275
Caddo Central Oil & Ref. Co.	250
White Oil Corporation	60
Miscellaneous	2,945
Total	11,135
Last week	10,860

HOMER PRODUCTION

Shreveport, La., Sept. 12.—The average daily production in the Homer field in Claiborne Parish for the past week was divided approximately as follows:

	Barrels
Standard Oil Company	4,300
Gulf Refining Company	2,275
Gilliland Oil Company	2,065
Simms Oil Company	800
Arkansas-Invincible Oil Corp.	790
Arkansas Natural Gas Co.	760
The Texas Company	630
White Oil Corporation	470
United Oklahoma O. & G. Corp.	520
Louisiana Oil Ref. Corp.	385
Sinclair Oil Company	320
Miscellaneous	830
Total	14,145
Last week	14,460

NORTH LOUISIANA COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Haynesville Field—		
Ohio Oil Company:		
Garrett 2, 24-23-8	200	2844
Garrett 15, 23-23-8	175	2856
Hunt 5, 16-23-8	150	2824
Hunt 6, 16-23-8	125	2819
Hunt 12, 16-23-8	5	2837
Hunt 13, 9-23-8	60	2820
Sherman 14, 16-23-8	120	2810
Simms Oil Co.:		
Hunt 6, 8-23-8	‡	2805
Sanders 3, 18-23-8	‡	2800
Standard Oil Co.'s Barker B-8, 20-23-8	‡	2817
Western Extension, Webster Parish		
Gulf Ref Co.'s Kilpatrick 1, 13-23-9	25	2800
Steineau et al's Kilpatrick 1, 13-23-9	25	2811
Total, 12 wells	885	
De Soto Parish—		
De Soto Oil & Gas Co.'s Payne 1, 12-11-16	10	2660

HAYNESVILLE DRILLING REPORT

Webster Parish

LeGuerre Synd.'s Duke 1, 13-23-9, dr 2155 ft.

Claiborne Parish

Gilliland Oil Co.'s Sherman 5 and 6, 10, dks; Taylor 7, 14, dr 1100 ft.

Louisiana Oil Ref. Corp.'s Beene A-2, 13, testing 2831 ft; Beene A-3, dk; Sherman 4, 23, wosr 2832 ft; Sherman A-4, 10, fsh 2744 ft.

Ohio Oil Co.'s Camp 9, 15, wosr 2809 ft; Camp 11, testing 2848 ft; Camp 12, 10, lcn; Camp 3, (Acct. 2) 24, dr 900 ft; Garrett 10, 23, set 6-inch 2734 ft; Garrett 11, 24, set 6-inch 2735 ft; Garrett 16, 23, wosr 2852 ft; Garrett 20 and 21, lcns; Garrett 22, dr 120 ft; Garrett 24, set 6-inch 2721 ft; Hunt 14, 9, wosr 2789 ft; Hunt 15, 16, wosr 2843 ft; Hunt 18, dk; Hunt 19, 20 and 21, lcns; Lowe 5, 17, wosr 2830 ft; Reeder 1, 26, wosr 2823 ft; Seegars 4, 9, wosr 2840 ft; Sherman 4, 23, wosr 2819 ft; Sherman 5, dr 2400 ft; Sherman 6, set 10-inch 95 ft; Sherman 11, 15, wosr 2807 ft; Sherman 12, wosr 2798 ft; Sherman 13, wosr 2807 ft; Sherman 15, 16 and 17, lcns; Sherman 18, set 6-inch 2734 ft; Sherman 19, set 6-inch 2736 ft; Sherman 2 (Acct. 2) 24, set 6-inch 2741 ft; Taylor 2, 13, wosr 2837 ft. Owenwood Oil Corp.'s Camp 2, 19, sd 2782 ft.

Roxana Pet. Corp.'s Hunt 1, 4, sw 3181 ft, sd. Russell et al's Sneed 1, 24, set 6-inch 2760 ft.

Simmons Bros.' Dawson 1, 25, testing 2864 ft. Smitherman & McDonald's Winn 3, 8, dk; Winn 6, 8, fsh 2930 ft.

CADDO DRILLING REPORT

Alabama Pet. Corp.'s Barlow 1, 5-21-15, r 2820 ft; Ramft 1, 33-22-15, dry 1063 ft, sd. Amerada Pet. Corp.'s Jolly 1, 27-22-15, dr 3260 ft. Arkansas Natural Gas Co.'s Ardis & Lay 253, 36-22-15, dr 2100 ft. Austin Oil Co.'s Jolly B-4, 21-22-15, lcn; Jolly B-5, wosr 1042 ft.

Belchic & Laskey's Noel 1, 25-21-15, sd 2390 ft.

Chandler & Trahan's Jolly 1, 22-22-15, dr 2800 ft.

Dixie Oil Co.'s Noel B-2, 19-21-14, testing 2392 ft; Robertshaw 46, 14-21-15, dr 1715 ft. Doan Oil Co.'s Louisiana Oil Co. 9, 5-20-15, testing 6-inch 2700 ft.

Fortuna Oil Co.'s Robertshaw 11, 23-21-15, dr 2615 ft; Robertshaw 14, 23-21-15, cementing off sw 2872 ft; Robertshaw 15, dr 2920 ft.

Louisiana Oil Ref. Corp.'s Lane A-4, 19-21-14, sd 2387 ft; Crye 10, 22-21-15, wosr 2345 ft.

McCarty & Giles' Seaman & Bradford 1, 34-21-15, dr 1200 ft.

Oregon P. & R. Co.'s Oden 1, 27-19-14, set 8-inch 2150 ft.

Tarver et al's Bashara 6, 23-21-15, testing 4½-inch 2808 ft. The Texas Co.'s Caddo Lands 43, 23-21-15, dr 2550 ft; Head 1, 26-21-15, sd 2444 ft; Herndon 6, 14-21-15, sdtr 3114 ft.

Woodbine Oil Co.'s Robertshaw 3, 23-21-15, testing chalk rock 1650 ft. Woodley Pet. Co.'s Noel 5, 25-21-15, rig sd, 2390 ft; Noel 12, wosr 2387 ft.

BELLEVUE SHALLOW FIELD DRILLING REPORT

Gulf Ref. Co.'s Bliss & Weatherbee A-8, 15-19-11, set 6-inch 353 ft; Bliss & Weatherbee A-10, rig.

Humble O. & R. Co.'s Bliss & Weatherbee B-3, 14-19-11, lcn.

Louisiana Oil Ref. Corp.'s Bodcau A-9, 15-19-11, sd 1080 ft; Bodcau A-14 and A-16, lcns.

R. O. Roy & Co.'s Scanlan 7, 8 and 9, 15-19-11, lcns.

Standard Oil Co.'s Kendrick A-2, 22-19-11, lcn; Kendick B-1, dr 2185 ft; Louisiana Oil Refining Corp.'s Fee 3, 11-19-11, lcn; McKinney 1, 14-19-11, dk; Moorey 1, 28-19-11, set 4½-inch 2621 ft; Wyche 2, 14-19-11, dr 2230 ft.

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Likely enough most bankers are made of stuff that enables them to look beyond the immediate circle of their business interests. A man who mills around like a blind mule hitched to a cane mill can't expect other folks to trust him with their money.

Saturday we got a letter from a Texas Banker whose sense of the fitness of things has been intrigued by the fact that PELCO Bits make more feet of hole with less attending hazard.

Petroleum being one of Texas' greatest industries, our Banker champion doubtless figures that anything which is good for the industry is good for the banks.

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Louisiana Operators Are Guessing Now

They are wondering if new Webster Parish well is so good after all

SHREVEPORT, LA., Sept. 11.—Louisiana operators devoted all of their thoughts last week to the possibilities of Lloyd Harris' recently completed discovery well near Sarepta, in Webster Parish. The well remains shut in, pending the completion of a separator and five 500-barrel steel tanks. However, it is thought that these will be completed and that the well will be opened up today or tomorrow.

There have been no new developments to guide one's opinion as to the ultimate worth of this new discovery; nevertheless, as frequently happens following the first flash of hysteria caused by the discovery of oil in wildcat territory, the pendulum of public opinion has swung from the heights of optimism to the depths of pessimism, apparently without tangible cause other than the memory of the behavior of earlier Webster Parish wells which showed oil in tantalizing quantities but which could not be completed as commercially successful operations. Then, too, sober second thought has been unable to avoid the obvious fact that the gravity of the newly discovered oil is low and that it is not rich in gasoline content.

Homer and Haynesville

On the other hand, those whose favorable opinions on this well have remained unshaken by adverse comment point out that both Homer and Haynesville passed through similar periods of despondency, during which the faint-hearted were loud in the expression of their fears that the discovery wells would prove to be flashes in the pan—"and look at Homer and Haynesville now!"

It might be said that this is the guessing period, as every operator that one meets is undecided as to whether he should "shoot the roll" or "play 'em close." The major companies, which, during the 19 months that have elapsed since the occurrence of the spectacular blow-out in the first of the famous Gleason wells, have had ample opportunity to acquire acreage, are fairly well represented in the matter of general lease protection; and the majority of them seem disposed to rest on their oars until further development has indicated the direction in which the cat may be expected to jump.

Probable Trend

The matter of the probable trend of the productive area is the hardest nut that local dopesters have to crack. On the east is the Haynesville field; on the west is the Plain Dealing community, in which is located the Scovell and Gaines well, which produced several thousand barrels of oil in July, 1917; on the southeast are the Webster Parish gas wells; and, to make the problem more difficult, salt water wells may be found at varying distances in all directions from it. However, the fact remains that the untested areas are large enough to contain other fields of the size of Homer and Haynesville.

A great many rumors are current in regard to negotiations for the sale of large tracts of close-in acreage to one of the companies of the Standard group. However, no announcements have been made; and if such a trade is in progress it is probable that it has not yet been consummated. A number of small sales and development contracts have been made; but as yet there has been no wild scramble for acreage. Leases within a radius of one mile from the well are being offered at from $200 to $250 per acre.

The Humble Oil and Refining Company is drilling deeper after having baled salt water from its Hicks wildcat in section 10-22-9, Webster Parish, in which nine feet of sand at a depth of 2794 feet was being tested.

Another Pool at Homer?

Homer people experienced a thrill last Saturday when it was reported that the Gulf Refining Company had obtained a show of oil from a sand encountered at 2109 feet in its Meadows test being drilled in section 20-21-7, Claiborne Parish. The drilling of this well, which is located about one mile east of the nearest production in the Homer field, is said to have been based on the belief that another oil reservoir may exist in this vicinity. Six-inch casing is now being unloaded at the well; and it is presumed that it will be cemented above this sand for the purpose of making a thorough test of it.

To Test Deep Sand at Bellevue

The Standard Oil Company has set and cemented a string of 4½-inch casing at 2605 feet in its Moorey No. 1, located near the center of section 28-19-11, Bossier Parish, in which, as recorded on this page last week, a gas blow-out was encountered at a total depth of 2621 feet. It is said that the plug will be drilled in this well during the current week.

ELM GROVE DISTRICT DRILLING REPORT

Atlas Oil Co.'s Caplis 7, 23-16-12, wosr 1552 ft.

Gulf Ref. Co.'s Hodges 11, 24-16-12, dr 3760 ft.

Louisiana Gas & Fuel Co.'s Hodges B-2, 9-16-11, rig.

R. O. Roy & Co.'s Caplis 6, 23-16-12, wosr 1558 ft.

The Texas Co.'s Caplis 10, 24-16-12, rig; Caplis 11, lcn.

MONROE DISTRICT DRILLING REPORT

Ouachita Parish

Atlas Oil Co.'s West Virginia 1, 34-19-5E, dr 2535 ft.

Hatcher & Evans' Frierson 1, 20-19-4, dr 2040 ft. Huber Carbon Co.'s Fee 2, 5-18-5E, fsh 2195 ft.

Montgomery Drlg. Co.'s Miller 1, 19-18-5, dr 2105 ft.

Ouachita Natural Gas Co.'s Allison 4, 18-20-5E, fsh 2220 ft; Walker 2, 32-19-5E, rig.

Southern Carbon Co.'s Fee 13, 9-19-5E, dr 2025 ft; Fee 14, dr 2135 ft. Standard Carbon Co.'s Vinson 1, 32-19-5E, setting 6-inch 2189 ft.

The Texas Co.'s Gibbs 1, 29-19-5E, dk timbers; O'Neill 1, 33-19-5E, rig.

Morehouse Parish

Morris Trustee's Crossett 9, 14-21-4, dr 800 ft; Tensas 2, 26-22-4E, set 6-inch 2158 ft.

Southern Carbon Co.'s Spyker 7, 8-20-5E, set 6-inch 2158 ft.

The Texas Co.'s Tensas 3, 10-20-4E, set 10-inch 2075 ft.

United O. & G. Prod. Co.'s Evans 1, 27-20-5E, setting 8-inch 1050 ft.

C. W. Clark, geologist and oil operator, returned to Wichita Falls late last week from a three weeks vacation spent in the Ozark Mountains in Arkansas.

SOUTHERN LOUISIANA PRODUCTION

Lake Charles, La., Sept. 11.—The daily average production of the South Louisiana fields for the past week was divided about as follows:

	Barrels
Vinton	4,350
Evangeline	450
Edgerly	370
Anse La Butte	90

SOUTH LOUISIANA DRILLING REPORT

Vinton

Gulf Ref. Co.'s Gray 1, dr 3600 ft; Vincent 26, dr 2750 ft.

Edgerly Pet Co.'s Lasso 1, dr 2275 ft.

Just Oil & Ref Co.'s Rodgers 1, dr 3845 ft.

Vinton Pet Co.'s Gray 35, dr 1600 ft; Harmony 12, dr 2225 ft.

Wilson Tucker's Parks 6, dr 2550 ft.

Tanner Oil Co.'s Vincent 1, fsh for tubing.

Texas Co.'s Gray 17, dr 520 ft.

Seiss and Ratcliff's Green 3, dr 2320 ft.

Edgerly

Coastal Pet Co.'s Hunter 1, sd.

Gulf Ref. Co.'s Bright Penn 38, dr 3650 ft.

Evangeline

Hansierre et al's 1, dr 975 ft.

C. O. & F. Co.'s Fee 85, testing 2710 ft.

Texas Co.'s Latreille 102, dr 2075 ft.

St. Martinsville

Gulf Ref Co.'s Levert St. John, rig up.

Bouillon Bayou

Gulf Ref. Co.'s Hope Oil Co. 3, dr 1410 ft.

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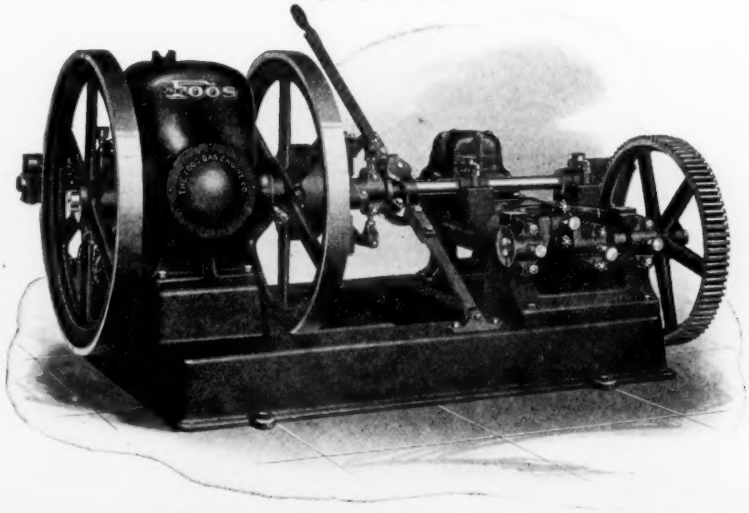

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Roumania Production Shows Slight Decline

Bucharest, Roumania, Sept. 2.—Production of crude oil in Rumania for the month of July as compared with June, given by individual companies, follows:

Companies	July	June
Astra Romana	32,542	32,816
Romano-Americana	18,145	20,067
Steaua Romana	19,228	18,427
Concordia	7,553	7,809
Creditul Minier	4,508	3,064
Trajan Roum. Oil Cy.....) Anglo Roum. Petr. Cy.....) Stavropoleos Moreni Oil Propr .....)	.....	6,286
The Becin (Roum.) Oil Fields .....) Unirea .....)		
Colombia	8,360	6,124
Internationala	3,155	3,093
Orion	4,212	4,301
Roumanian Cons. Oil Fields Ltd. .....)	.....	1,459
Chiciura Oil. of Roumania	864	355
Aquila Franco Romana	867	998
I. R. D. P.	445	369
Romano-Belgiana	765	818
Soc. de Petr. de Bustenari	456	362
Petrol Block	344	428
British Colonial Petr. Corp.	578	285
Kern Romana Ltd. (H. F. Drader)	158	138
Generala Petrolifera	160	148
Dacia Rom. Petr. Synd. (R. Van Sickle)	786	553
Cometa	188	205
Victoria	240	269
Romania Petrolifera	1,885	1,905
Prahova	.....	192
Soc. Francaise des Petr. de Bordeni	.....	.....
Petrolul	120	107
Uniunea Petrolifera	19	19
Maces	76	117
Expl. J. F. Lucey	185	259
Magda	.....	.....
Petrolmina	.....	34
Naphta Romana	.....	61
Stella Petrolifera	82	79
Soc. Morenii	.....	14
Total	105,921	111,161

Note—figures compiled by Monitieur Du Petrole.

EL DORADO DRILLING REPORT

Associated P. & R. Co.'s Thurkhill 3, 28-18-15, wosr 2149 ft.

Big Four Oil Co.'s Cranston 2, 19-17-14, sd 2138 ft; Rogers 1, 17-18-17, dr 1305 ft. Bondurant et al's Stegall 1, 31-18-12, r 1090 ft. Brown Oil Co.'s Nash 1, 3-19-15, set 6-inch 2070 ft.

Carlton et al's McGowen 1, 16-17-13, sd 2508 ft. Coleman et al's Pendleton 2, 21-18-15, dr 2140 ft; Pendleton 3, dr 1275 ft. Constantine Ref. Co.'s Burns 1, 12-18-16, dr 1315 ft; Goodwin 2, 37-17-16, dk; Hinson 5, 7-18-15, dk; Martin 1, 1-18-16, dr 1185 ft; Robinson 5 and 40-3, 6-18-15, dks. Cooper et al's Burns 1, 32-18-15, wosr 2186 ft.

El Dorado Natural Gas Co.'s Mellor 1, 1-18-16, fsh 2950, flowing by heads. Equitable Pet. Co.'s Barton 1, 33-17-15, set 6-inch 2042 ft. Eureka Pet. Co.'s Cullens S-3, 4-19-15, set 4½-inch 2136 ft.

Foster et al's Cobb 1, 5-19-15, rig. Foster Pet. Corp.'s Daniels 2, 19-18-15, dk. Frank et al's Murphy 1, 20-17-14, dr 1400 ft.

Gann et al's Murphy 2, 20-17-14, dr 200 ft. Gardner et al's Smith 1, 19-17-14, wosr 2182 ft; Smith 2, wosr 2171 ft. Garenot Drlg. Co.'s Smith 1, 29-17-14, wosr 2221 ft.

Harrell & Hatcher's Decou 3, 6-18-15, dk; Hamilton 1, 24-19-16, dk. F. C. Henderson's Pratt 4, 8-18-15, rig. Hudson Oil Co.'s Traylor 4, 4-19-15, wosr 2169 ft. Humble O. & R. Co.'s Webb 1, 6-18-13, set 6-inch 2551 ft.

Ingalls et al's Thurkhill 2, 28-18-15, set 6-inch 2130 ft.

Jarmon Drlg Co.'s Benson 3, 4-19-15, dk. Jones et al's Traylor 1, 9-19-15, wosr 2172 ft.

Keen & Wolf's Slaughter 1, 10-17-16, set 6-inch 2057 ft. Kemp et al's Garza 1, 6-19-15, set 12½-inch 220 ft. Knott et al's Nash 1, 29-17-15, to deepen, 2210 ft.

Livingston Oil Corp.'s Rock Island 8, 33-18-15, dr 1865 ft.

Magnolia Pet. Co.'s McKinney Reed 3, 25-17-16, set 6-inch 2160 ft. Marr et al's Thurkhill 1, 29-18-15, setting 6-inch 2150 ft. Montgomery & Humble's Burton 1, 28-18-15, sd 2159 ft. Morefield et al's Cates 1, 33-18-15, wosr 2182 ft; Cates 2 and 3, lcns. Morris Drlg. Co.'s Robinson 1, 32-18-14, dry 2347 ft; Rowland 2, 28-18-15, sd 600 ft; Greenlee 1, 28-18-15, fsh 2129 ft. Mutual Oil Co.'s Spooner 2, 29-19-16, set 10-inch 180 ft. McDuff & Greenwood's Newsom 6, 5-18-15, wosr 2129 ft. McMurray Drlg. Co.'s Burton 1, 28-18-15, abn 2147 ft; Brown 1, 20-17-14, set 10-inch 126 ft.

Ozark Oil Co.'s Cranston 3, 19-17-14, wosr 2168 ft; McMurray 1 and 2, 19-17-14, dks; McGough 1, 29-17-14, dk; Murphy 1, 20-17-14, wosr, 2162 ft; Morgan 1, 12-17-15, dk; Ripley 1, 19-17-14, abn 2237 ft; Ripley 2, dk; Smith 4, 19-17-14, sd 2180 ft; Smith 5, lcn; West 1, 19-17-14, dr 2080 ft.

D. C. Richardson's Murphy 1, 20-17-14, dr 1250 ft. Rooker et al's Yarbrough 1, 2-17-16, dr 1600 ft.

Skelly Oil Co.'s Helwig 6, 6-18-15, wosr 2176 ft. Southern O. & L. Co.'s Armstrong 11, 31-17-15, fsh 2596 ft. Southern P. & R. Co.'s Snowden 4, 20-18-15, wosr 2184 ft. Standard Oil Co.'s Herrin 9, 18-18-15, wosr 2177 ft; Murphy 2, 6-18-15, wosr 2143 ft; Trimble 2, 1-18-16, dr 185 ft. Stock et al's Bell 1, 20-17-15, wosr 2181 ft; Woods 3, 20-18-15, rig.

Tarkington et al's Cullens 3, 9-19-15, plugging off sw 2197 ft; Cullens 4, lcn; McKinney 1, 9-19-15, wosr 2187 ft.

Woodley et al's Lovett 2, 5-18-14, dr 1520 ft; Burns 5, 32-18-15, set 6-inch 2116 ft; Horton 1, 2-18-15, wosr 2151 ft; Horton 2, 1-18-15, sd 2262 ft.

Zoder et al's Moody 1, 17-17-14, dr 815 ft.

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—side reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

2000 Barrel Producer for Smackover

Standard completes well offsetting discovery test in Arkansas' new field

EL DORADO, ARK., Sept. 11.—The completion last week of a 2000-barrel oil well offsetting the Smackover discovery well in section 29-15-15, Ouachita County, together with the two-mile extension chronicled in this column last week, serves to remove the last vestige of doubt in regard to the brilliant prospects of Arkansas' newest oil field. The well referred to is the Standard Oil Company's No. 1 Murphy, a direct offset to the V. K. F. Drilling Company's Richardson No. 1, which opened the field. The sand was encountered at 2026 feet, and was penetrated to a total depth of 2043 feet. It is producing 19 gravity oil.

The Simms Oil Company's No. 1 Reynolds, in section 32-15-15, Ouachita County, blew in last week with an initial production estimated at 10,000,000 cubic feet of dry gas per day. The gas is being mudded off for the purpose of drilling deeper in search of oil production. This well is about one mile south of the discovery well.

J. W. Olvey and associates are mudding off the gas encountered at 1895 feet in their Umstead well, also for the purpose of drilling deeper. This test is located in section 5-16-15, Ouachita County, about half way between the Smackover discovery well and the Union County gas craters.

In section 12-16-16, Union County, Greenwood and McDuff have mudded off the gas in their No. 1 Houston; and are now drilling deeper at around 2075 feet. The gas in this well was encountered at a depth of 2047 feet.

In section 35-15-16, Union County, the Harris Drilling Company is testing casing preparatory to drilling in on its O'Spaha well, located about four miles southwest of the V. K. F. Drilling Company's well.

Reynolds et al are preparing to test 20 feet of sand found at a depth of 2045 feet in their Pool No. 1, located in section 20-15-15, about one mile north of the discovery well.

Two More Producers Promised

Both the Queenan-Wells-Dudney Syndicate's Webfer well in section 25-15-20 and Hude & Aarnes' Adkins well in section 13-15-20, of the Stephens field in Columbia County, are awaiting the completion of pumping equipment. Both these wells have encouraging quantities of oil in them; and it is considered probable that they will make good pumpers when put on the beam. The Queenan-Wells-Dudney Syndicate is erecting a derrick for its second well on the Webfer land.

Another Deep Test

The Standard Oil Company began drilling last week in the No. 2 Trimble in section 1-18-16, Union County, a deep test located near the El Dorado Natural Gas and Petroleum Corporation's recently completed Mellor well, which is the first well in the El Dorado field to produce oil from the Blossom sand.

A Wildcat Growls

The Tycap Oil Company is preparing to cement a string of casing in its No. 1 Mason, located in section 7-11-25, Hempstead County, near the town of Washington. It is reported that this well encountered a saturated oil sand at a depth of 2365 feet. Visitors returning from the well state that it contains a considerable quantity of 31 gravity oil.

The Tycap Oil Company, headed by A. G. Thurman of Grand Rapids, Michigan, is said to own a block of more than 5000 acres surrounding this well.

ARKANSAS PRODUCTION

El Dorado, Ark., Sept. 11.—The average daily production for the El Dorado field in Union County for the last week was divided approximately as follows:

	Barrels
Gulf Refining Company	2,500
Standard Oil Company	2,045
Arkansas Natural Gas Company	1,840
Phillips Petroleum Company	1,075
Constantine Refining Company	1,000
Humble Oil & Refining Company	870
F. C. Henderson	670
Detroit Summerfield Oil Company	625
Woodley Interests	615
Johnson Drilling Company	580
Sun Company	570
Magnolia Petroleum Company	565
Gladys Belle Oil Company	460
Henry Hobbs	450
Harrell & Hatcher	435
Terry Summerfield Oil Company	425
Caddo Central Oil & Refining Corp.	415
Amerada Petroleum Corporation	375
Arkansas-Invincible Oil Corp.	370
White Oil Corporation	365
J. S. Richardson	360
A. H. Ramage	350
Livingston Oil Corporation	335
Skelly Oil Company	330
Associated Prod. & Ref. Corp.	320
R. J. McMurray	320
Pure Oil Company	295
Hudson Oil Company	290
Webster & Wingfield	285
Foster Oil Company	270
Clark & Greer	270
Weiss Oil Corporation	260
E. M. Jones	235
J. L. Hunt	225
Vaughan & Gray	220
Enfisco Oil Company	210
Gann & Burke	205
Southern Oil & Land Company	205
Big 4 Oil Company	200
G. S. & G. Corporation	200
Houston Oil Company	200
Biles & Wilroy	200
J. H. West	200
Miscellaneous	7,125
Total	29,360
Last week	29,800

SMACKOVER

El Dorado, Ark., Sept. 11.—The average daily production from the Smackover Field in Union and Ouachita Counties for the last week was divided approximately as follows:

	Barrels
V. K. F. Drilling Company	700
Perry & LeGrande	250
Gulf Refining Company	15
Crawford & Sebastian	10
Total	975
Last week	1,730

STEPHENS, ARKANSAS, DISTRICT

Columbia County

Cox Oil Enterprise's Russ 1, 14-16-20, dk.

Haskell et al's Webfer 2, 24-15-20, rig.

Hude & Aarnes' Adkins 1, 13-15-20, wosr 2089 ft.

Murphy et al's Russ 1, 14-16-20, dk.

Queenan-Wells-Dudney Synd.'s Webfer 1, 25-15-20, wosr 2127 ft; Webfer 2, dk timbers.

Tate et al's Booth 1, 34-16-19, dk; Hall 1, 11-15-20, sd 2450 ft. Terry et al's Hall 1, 11-15-20, dr 2450 ft. Transcontinental Oil Co.'s Curry 1, 5-16-19, sw and show of oil, 2255 ft.

Ouachita County

Young et al's Haire 1, 28-15-19, dk.

SMACKOVER, ARKANSAS, DISTRICT

Ouachita County

Bailey et al's Rhoten 1, 32-15-15, rig.

Baker et al's Murphy 1, 28-15-15, dr 1550 ft. Baker, Trustee's Usrey 1, 36-15-15, fsh 1400 ft.

Dasko et al's Berg 1, 28-15-15, dk.

Forrest Oil Co.'s Goodwin 1, 29-15-15, rig.

George & Jones Drlg. Co.'s Umstead 1, 4-16-15, shut in, 1964 ft.

Olvey et al's Umstead 1, 5-16-15, mudding off gas to deepen, 1895 ft.

Reynolds et al's Pool 1, 29-15-15, set 6-inch 1940 ft.

Simms Oil Co.'s Murphy 1, 28-15-15, dr 1550 ft; Reynolds 1, 32-15-15, set 6-inch 1950 ft. Standard Oil Co.'s Murphy 2, 28-15-15, lcn.

Thompson et al's Arnold 1, 24-15-16, dr 2325 ft.

V. K. F. Drlg. Co.'s Richardson 4, 29-15-15, dk.

Union County

El Dorado Natural Gas Co.'s Vinson Tatum 1, 11-16-16, sd 2045 ft.

Greenwood & McDuff's Houston 1, 12-16-16, mudding off gas to deepen, 1895 ft.

Harris Drlg. Co.'s O'Spaha 1, 35-16-16, set 6-inch 1833 ft.

Marr et al's Sexton 1, 4-16-16, rig.

KEY TO ABBREVIATIONS

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ARKANSAS COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
El Dorado Field—		
Nelson et al's Buswell 3, 19-18-15	50	2150
Rush et al's Smith 2, 28-18-15	‡	2157
Total, 2 wells	50	
Smackover Field—		
Oil Operators Trust Co.'s Bilyen 1, 8-16-15, Union County	§	850
Standard Oil Co.'s Murphy B-1, 29-15-15, Ouachita County	2000	2043
Total, 2 wells	2000	

§Fresh Water.

Empire Ponca City Plant Will Resume Operation

Ponca City, Okla., Sept. 12.—With the completion of additions and improvements on the plant of the Empire Refineries, Inc., late this month the refinery will be put back in operation after a shut down of more than a year. The Ponca City plant is connected by pipe line with the August field of Kansas and the Osage County fields in North Oklahoma.

Improvements to the extent of about $1,800,000 have been made on the Empire plant and the company's Independence Lubricating plant has been moved to Ponca City and combined with the run down plant. The company plans to build a shop for repairing tank cars, as well as a station for the wholesale distribution of oils and a filling station for Ponca City.

IMPROVEMENT ON FISH TAIL BIT IS MADE

A new fish tail bit that will not unscrew in the hole has been developed by G. F. LeBus of the LeBus Machine Shop, Electra, Texas.

The feature of the bit which makes it impossible to lose it in the hole is a clutch tooled from the top of the bit, which, when the bit is screwed to the collar engages and remains engaged until the bit is withdrawn from the hole. A "crank," a small affair, is inserted through the water holes in the bit, and unlocks the clutch.

The bit is made of the usual bit steel and sells for the same price as the ordinary fish tail bit.

Tulsa, Okla., Sept. 12.—W. R. Page, president of the Texolean Oil Company, died September 8 at his home in Olean, New York. He was well known throughout the Mid-Continent fields, where his company has extensive holdings.

Now Rumor Says Cosden & Company To Be Absorbed by Dutch Shell

TULSA, OKLA., Sept. 12.—Another American oil concern is under the spell of the Dutch-Shell rumor. This time it is Cosden & Company.

The rumor came out of New York, coincident with the advance of Cosden stock to $50½ a share, an advance of two points, with London buyers seeking the stock.

The rumor was denied in Tulsa at Cosden headquarters. J. S. Cosden, president of the company, is now in New York, where E. R. Perry, vice president and general manager, and D. W. Moffitt, vice president, have gone for a conference. Cosden as well as Shell officials in New York would not talk on the matter.

The Cosden rumor takes a place but lately held by the Marland Refining Company. For several months past, there have been frequent predictions that control of the Marland interests would be announced by the Shell combine. The Producers and Refiners Corporation also had its day as a favorite of the great Hague company. These last two are forgotten in the Cosden rumor.

Particular interest attached to the Cosden rumor because of its close business relations with the Standard Oil Company of Indiana. For several seasons, excess output of the Cosden refining plant at West Tulsa, the largest refinery in the Mid-Continent district, has been disposed of through the Standard Oil Company of Indiana.

In the past there have been frequent rumors that Cosden shares were finding their way into the strong boxes at 26 Broadway. In fact Cosden stock has advanced on these rumors, as it did last week on the Shell rumor.

The Cosden concern is one of the largest of the Mid-Continent independent companies. It has 1,400,000 shares of common no par stock authorized with 806,380 shares outstanding. Of 7 per cent cumulative preferred stock, $7,000,000 has been authorized, while only $3,579,040 has been issued.

For the second quarter this year the Cosden Oil and Gas Company had production in Oklahoma of 370,209 barrels. The company has production in Texas and Kansas. The Atlantic Petroleum Company, subsidiary of the Cosden concern, had total production 282,595 barrels for the second quarter in Oklahoma. This company has holdings in Kansas.

V. R. Wittich, Jr., of the Continental Supply Company at New York, has been visiting his parents in Tulsa during the week. He has been studying conditions in the Mid-Continent fields.

Ardmore, Okla., Sept. 12.—The Pure Oil Company's refining plant here, the largest in Southern Oklahoma, with daily capacity of 7,000 barrels, has been put in operation after being idle for months. It is running at about half capacity, using Healdton crude. A contract has been made with the Healdton Pipe Line Company for the delivery of 100,000 barrels of crude each month.

THE POSTMASTER KNEW

A letter addressed to "The Livest Oil Journal on Earth" was received by the Houston postoffice.

How do we know?

Just this way—the postal boys knew what was the livest oil journal on earth and it was stuck in the Blue Devil's box.

Ardmore, Okla., Sept. 12.—The Cameron Refining Company has bought an interest in the Sharps lease of the Graham field, paying $350,000 for its part.

J. H. Pressley, assistant secretary of the Sun Company with headquarters at Dallas, Texas, is back in his offices again this week following several weeks of illness. Mr. Pressley recently underwent an operation for appendicitis and also suffered an attack of Dengue Fever.

T. M. Rinehart Jr., independent oil operator of Wichita Falls, departed last week on a business trip to Chicago.

CISCO BRANCH OF THE TEXAS CO. HAS NEW DEPARTMENT

Houston, Texas, Sept. 13.—The central west Texas division of The Texas Company at Cisco, Texas, has created a new department which will be the warehouse accounting department and will employ about twelve clerks, four of which left the Houston office today to report for duty in the new department.

A. E. Warner, V. D. Bostick, C. O. Cartwright and Joe Dyer are the boys from the warehouse department of the Houston office which are being transferred to Cisco. H. M. Anderson is general superintendent of the production department and in charge of operations in the central west Texas division.

Tampico, Tamps., Sept. 9.—The Mexican Petroleum Company's No. 9 Cerro Viejo which came in last Sunday with a heavy flow of gas and spray of oil has increased its oil production until it is now estimated to be making around 12,000 barrels. It was completed at a depth of 1897 feet.

The oil is flowed to the Poterero pump station where it is pumped to Tuxpam and Tampico.

Patrick M. Longan, resident manager of the International Petroleum Company at Tampico, Mexico, has arrived in New York on an extended business trip. Mr. Longan will visit the company's holdings at Frontera and it will probably be the first of the year before he returns to his headquarters.

Many Completions in Eastern Fields Despite Hottest Week of the Season

PITTSBURGH, PA., Sept. 11.—A fairly prosperous week prevailed in the more eastern oil fields of Pennsylvania, New York and West Virginia, especially in the Pennsylvania end, where a large number of completions were recorded and the southern New York area came to the fore with an unusual number, taking into consideration the weather conditions that prevailed, it being the hottest week of the year.

In the fields east of the Mississippi river, the week shows a total of 193 completed wells, 29 of which were dry holes and 24 gas wells with a combined casing-head volume of 45,250,000 cubic feet, leaving 140 oil producing wells with an initial production of 2470 barrels, rather light due to the failure of finding very few select producers, the wells being more uniform. Pennsylvania leads with a total of 71 completions, six dry holes, eight gas wells with a volume of 10,000,000 cubic feet, and an initial production of 291 barrels of oil. New York has 17 completions, two dry and three gas with 3,000,000 cubic feet, and 12 oil wells with a production of 67 barrels. West Virginia had 29 completions, 13 gas with a volume of 30,750,000 cubic feet, seven dry holes and nine oil wells with 32 barrels. Maryland had one wildcat well which has been drilling for a great many months but was abandoned at a depth of 5000 feet. This well was drilled by the Pittsburgh Oil Syndicate in the mountains of Garrett County, and failed to have any showing worth while.

The surprise of the year in the old Pennsylvania regions was the opening of what is an entirely new pool, and is one of the finds that always make the oil game so full of interest. This was at Tidioute, where during the past few months some remarkably fine wells have been developed, the best of which was the original producer drilled by the Carnahan interests with an initial production of around 1200 barrels, and since then quite a number of wells have been brought in, averaging well up around 400 barrels each flush. The size of the first well was due to the fact that no other wells were drawing from its source of supply, but since numerous wells have been brought in the flush production is not as high, but nevertheless the pool is an important one, the oil being of excellent gravity, coming from the Queen sand at around a shallow depth, making the wells very valuable at Pennsylvania prices and even a premium is reported being paid for the output. How extensive the pool will be remains to be seen. While the week shows no completions from the Tidioute regions, there are several wells that are nearing completion and should be heard of the coming week with stellar attractions. If a few more pools of the magnitude of the Tidioute could be found in the regions, then Pennsylvania might have a revival. The old Bradford field, in McKean County, is showing unusual activity, due to the fact that wells of commercial value are being developed daily and even a two-barrel well is a paying proposition, but the field is turning out wells that run much better, as high as 20 barrels a day. The famous Bingham tract which has been cut up into lots, is being thoroughly drilled over with good results, while in Venango County some wells as high as 10 and 15 barrels are being drilled in, which encourages further operations, for when once hooked onto power can be produced very cheaply.

The old field of Allegany County, southern New York, is becoming more attractive from week to week and these wells are of about the same stripe as those of Pennsylvania, being a northern extension of the old Bradford field. One well with 12 barrels and another with 10 barrels were the best results of the drill in that field during the week. A slight advance in the price of crude might bring about a hunt for new pools in the vicinity of the Allegheny fields, as there is a vast area of good looking territory to the southeast of Chautauqua lake and Jamestown, that looks well worth the testing out. The showing of oil reported in a test near Rochester, may mean further test work and the opening of a field while other sections of the state look just as promising.

PENNSYLVANIA COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Washington County—		
Manufacturers Light & Heat Co. 3 A. & D. England	¶½	....
Forest County—		
Whitmer & Co. 2 Clapp	¶1½	....
Lawrence County—		
Getty & Co. 9 Black	2	....
Greene County—		
Ferguson Oil & Gas Co. 3 Ferguson	5	....
Carnegie Nat. Gas Co. 1 Wm. Cooper	¶2½	....
Jesse L. Garard 3 J. E. Miner	5	....
Beaver County—		
McKinney & Co. 1 John Johan	*	....
White Coal Co. 1 Fee	*	....
C. Tope & Co. 1 J. W. Ramsey	2	....
Murrange & Miller 9 P. H. Hamsey	2	....
Butler County—		
Lang & Co. 1 Zillsman	¶2	....
American Natural Gas Co. 2 Flashner	*	....
Hersche & Co. 1 Corso	5	....
McCandless & Co. 2 Cumberland	5	....
Clarion County—		
J. Edinger & Co. 1 Whitling	¶½	....
Miller & Co. 2 Filgrove	*	....
Sloan & Co. 1 Sloak	¶2	....
J. S. Walker 12 Shakely	6	....
McElhattan & Co. 1 McElhattan	3	....
Alum Rock Gas Co. 4 Hockman	3	....
Franklin Trust Co. 4 Varner	3	....
Middle-Center Field—		
National Oil Co. 14 Stanton	2	....
Kendall Ref. Co. 18 Griffith	2	....
Fassemyer & Boyles 12 Thompson	2	....
Harris & Co. 22 Mitchell	2	....
I. X. L. Oil & Gas Co. 4 Lot 583	3	....
Wright & Co. 23 Vincent	3	....
J. Cochran 27 Lot 7	8	....
Venango County—		
Hancox & Co. 2 Dunlap	¶½	....
Harlan & Co. 1 Henderson	¶½	....
Murrin & McBride 1 Ambrose	*	....
Keely & Co. 1 Hoover	*	....
Alfred Roess 16 Campbell	15	....
H. C. Foster 55 Foster	3	....
Corbett & White 4 White	3	....
Helena & McLaughlin 51 Furnaceland	3	....
Critchlow & Co. 1 Hammel	5	....
Critchlow & Co. 2 Hammel	3	....
Espy & Co. 16 Espy	5	....
Smith, Brutche & Co. 9 Carter	7	....
Bob Foggan 17 Clark	7	....
S. J. Smith 55 Clark	7	....
Bradford Field—		
M. E. Jones 1 Jones	3	....
Born & Co. 27 Bingham 491	5	....
R. S. Pringle 1 Bingham 404	3	....
J. E. Ward 1 Bingham 400	5	....
J. A. Hooper 1 Bingham 465	6	....
Lane & Co. 1 Bingham 430	3	....
Wann & Co. 1 Bingham 388	5	....
Assoc. Prod. Co. 242 Bingham 582	5	....
McCullon & Howard 1 Bingham 468	6	....
George Bovaird 1 Bingham 391	10	....
D. W. Daly 20 Bingham 500	7	....
South Penn Oil Co.:		
1 Bingham 390	6	....
39 Bingham 583	5	....
F. M. Johnson 1 Bingham	5	....
J. W. Benton 1 Fee	3	....
Simon & Andrus 1 Fee	3	....
Newton & Co. 5 Newton	5	....
C. McGovern 1 Daugherty	5	....
Phoenix Oil Co. 71 Wood	6	....
W. B. Miller 1 Borden	5	....
Bancroft & Co. 1 Driving Park	6	....
E. R. Maxwell & Co. 13 Franchot	10	....
G. A. Simpson 1 Boyd	3	....
Rice & Co. 24 Weston	5	....
South Penn Oil Co. 25 Riddle	5	....
Franchot & Co. 96 Campbell	5	....
Forest Oil Co. 1 Porter	7	....
Thompson & Son 8 Franchot	10	....
N. V. V. Franchot 1 Loop	20	....

SOUTHERN NEW YORK COMPLETIONS

Company, Well, Location	Initial Production bbls.	Depth
Allegany County—		
Forest Oil Co. 22 Forest	12	....
Raymond & Co. 1 Champlain	10	....
McKean Gas Co. 1 Danforth	¶1	....
Prod. Gas Co. 1 Fogarty	¶1	....
Shannon & Co. 1 Wheeler	¶1	....
A. L. Shannon & Co. 1 Shannon	3	....
Forest Oil Co. 23 Forest	6	....
Sawnett Oil Corp. 1 Sawnett	6	....
C. A. Boyd 1 Drum	3	....
South Penn Oil Co. 1 Coast	3	....
Coast & Goodrich 1 Goodrich	3	....

Development in Ohio Fields Holding Steady; Several Good Wells Completed

LIMA, OHIO, Sept. 11.—The three fields of Ohio are holding their own in development work, the Northwestern Ohio end making the best showing for the week, as completions were few in both Central and Southeastern Ohio fields. In the Southeastern Ohio field, Jefferson county brings forth a couple of producers at 15 and 30 barrels, rather large for that territory, while the few completions from other counties were light.

Central Ohio which last week showed heavy completions, only had six wells for the week in review, but in that small number make up well in production, with one well at 180 barrels drilled by the Ohio Fuel Supply Company in Perry County, and in Hocking County, the Gordon Oil Company found a 65-barrel producer, and in Medina County, a wildcat well drilled by Kuntze & Hube on the Hale lease, showed 20 barrels from the Berea sand at a shallow depth of 480 feet. The two former wells found their oil in the deep Clinton formation.

An array of excellent pumpers were brought in during the week over several of the Northwestern Ohio counties, in the Trenton Limestone field, the best being a 40-barrel well in Van Wert County. The 23 wells completed in the old field for the week, had but three dry holes, the new initial production being 331 barrels for the 20 producers, a good average for a field where more than 60,000 holes have been punctured during the past 40 years. Most of the completions are located within defined limits while some are in advance of production. One well in particular is of more than minor importance, which is that drilled by C. C. Apple on the Sawmiller lease, which is an advance well and adds a nice area of territory to the producing territory. Some ten miles west of the old defined limits in Wood County, the Greenwood Oil Company brought in a 30-barrel well in its No. 4 on the Davis lease, in the northeast corner of Milton township, making four producers for that lease, during the past few months, the smallest of which showed 5 barrels. But little work has been done between the old field proper and the Davis lease, so there is no telling whether it is a real addition or a pool by itself.

Company, well, location	Initial Production bbls.	Depth
Dunnings & Son 1 Dunnings..	5	....
Albert Oil Co. 1 Vance.....	5	....
Albert Oil Co. 1 Albert	5	....
Deaman & Co. 1 Deaman....	6	....
A. C. Tuller 1 Tuller	*	....
Eastman & Co. 1 Eastman...	*	....

WEST VIRGINIA COMPLETIONS

Company, Well, Location	Initial Production bbls.	Depth
Tyler County—		
Carter Oil Co. 24 W. B. Maxwell	¶2	....
Manufacturers Light & Heat Co. 1 Wm. LeMasters	¶2	....
Manufacturers Light & Heat Co. 1 Henry Thompson ...	¶2	....
Riggs & Wright 1 R. Metcalf.	*	....
A. J. Simmons 1 W. R. McIntyre	2	....
Doddridge County—		
Manufacturers Light & Heat Co. 3 Cheuvront	¶2	....
South Penn Oil Co. 1 Milt Underwood	4	....
Pentz & Shrader 1 M. & Z. Underwood	5	....
Monongalia County—		
Hope Nat. Gas Co. 1 W. A. Park	¶¼	....
J. H. McDermott Oil Co. 6 A. B. Price	*	....
Philadelphia Oil Co 1 Mary Price	*	....
Ritchie County—		
Stephens Drilling Co. 1 B. Conley	*	....
S. T. Rutherford 23 West Virginia tract	2	....
Kanawha County—		
Peerless Carbon Co. 7 Osborne Bros.	¶1	....
United Fuel Gas Co. 7 Koontz-Osborne	¶4	....
Wetzel County—		
Manufacturers Light & Heat Co. 1 E. E. Moore	¶4	....
Manufacturers Light & Heat Co. 1 Catharine Cosgray ..	¶4	....
Braxton County—		
Risk Oil & Gas Co. 1 C. L. Mollohan	¶2	....
C. E. Goettman 1 A. W. McMillen	*	....
Wirt County—		
Heasley Oil & Gas Co. 2 G. W. Richter	10	....
Roane County—		
Reed Oil Co. 1 A. W. Shaffer	5	....
Pleasants County—		
Walker Oil & Gas Co. 1 Jacob Hooper	2	....
Calhoun County—		
Crowley & Co. 1 W. & G. Cooper	2	....
Harrison County—		
Horner & Schaffner 1 Susan Harbert	¶5	....
Lewis County—		
Leading Creek Oil & Gas Co. 2 P. H. Fisher	¶2½	...
Clayton & Williams 1 Dolan heirs	¶3	....
Wood County—		
Black Coat Oil Co. 1 G. R. Piersol	*	....
Marion County—		
Owens Bottle Machine Co. 1 J. W. Ballard	*	....
Gilmer County—		
Center Gilmer Oil Co. 1 O. M. Stump	*	....

MARYLAND COMPLETION

Company, Well, Location	Initial Production bbls.	Depth
Garrett County—		
Pittsburg Oil Synd. 1 Mountain tract	*	5000

CENTRAL OHIO COMPLETIONS

Company, Well, Location	Initial Production bbls.	Depth
Hocking County—		
Gordon Oil Co., 3 Wm. Stone..	65	....
Preston Oil Co., 2 F. J. Clark.	*	....
Perry County—		
Ohio Fuel Sup. Co., 3 Franklin County Bank	180	....
Allegheny Oil & Gas Co., 18 T. & M. Monahan	*	....
Medina County—		
Kuntz & Hube, 1 B. G. Hale..	20	460
Wayne County—		
Beaver & Garmon, 1 O. & W. Tracey	*	480

SOUTHEASTERN OHIO COMPLETIONS

Company, Well, Location	Initial Production bbls.	Depth
Muskingum County—		
Carter Oil Co., 1 A. L. Harrop	5	....
Ohio Fuel Sup. Co., 21 F. E. Stokes	4	....
J. C. Southerland & Co., 2 C. S. Steele	¶1½	....
Jefferson County—		
Southern Oil Co., 1 Dalrymple lot	30	....
Wickersham & Co. 1 Elias Wickersham	15	....
Noble County—		
Estadt & Co. 1 D. W. Williams	4	....
Hutcheson & Co., 1 Henry Estadt	*	...

NORTHWESTERN OHIO COMPLETIONS

Company, Well, Location	Initial Production bbls.	Depth
Auglaize County—		
Wm. Lang, 1 Eli Ramsey.....	*	1365
La Grange Oil Co., 2 J. W. Haas	11	1369
D. M. Crow & Co., 1 Mrs. John Doering	*	1390
C. C. Romshe, 1 Jacob Romshe	*	1400
Kenneth Wright & Co., 1 Lottridge	15	1362
Allen County—		
C. C. Apple, 1 E. Sawmiller..	30	1345
Geo. Helcamp & Co., 1 C. Vore	20	1370
W. L. Parmenter, 6 Samuel Keith	12	1347
Ohio Oil Co., 7 Matthew Suever	35	1356
Sandusky County—		
Paragon Ref. Co., 3 J. Kinker	8	1330
Hartman & Co., 6 Molkenbur.	6	1300
E. B. Smith, 29 E. B. Smith..	1	1294
Woodville Oper. Co., 7 Keaming	30	1310
Ottawa County—		
Bergman, Miller & Co., 1 John Draeger	3	1350
Zorn-Hornung Co., 5 Jacob Yeastings	10	1340
Ohio Oil Co., 17 Henry Blausey	20	1390
John Weber, 1 Lottie Shessler	10	1355
Van Wert County—		
B. Y. J. Oil Co:		
1 Clouse	20	1347
1 C. Kneller	10	1351

KENTUCKY COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Estill County—		
Becker & Schmidt, 7 Frank Rogers	2	....
Powell County—		
Profit Oil Co.:		
1 John A. Rogers	6	700
2 John A. Rogers	8	700
Kelley, Fulkes & Co., 4 Nancy Mays	35	....
W. E. Hupp, 1 Algerin Boyd	5	....
Warren County—		
J. C. Barnett, 13 Barbee	200	480
United Pet. Oil Synd., 1 Higginbotham	10	1120
Westken Oil Co., 1 R. B. Thompson	5	1370
Lester Production Co., 6 Jackson	5	1320
Miller & Co. 4 Davenport	2	1006
Allen County—		
Dreadnaught Oil & Ref. Co., 15 B. Stamps	25	369
Armor Oil Co., 5 Starks	5	315
White Plains Oil Co.:		
10 McDonald	10	463
9 Buchannan	75	360
Alton Oil Co., 4 T. L. Beam	20	369
Pointer & Jones, 3 Widow Gregory	100	350
Fishburn Oil Synd., 1 Fishburn	10	350
Unknown Parties, 1 J. Whitney	50	280
H. A. Kiser & Co., J. I. Shelton 18	150	290
Omar Oil & Gas Co., 4 Joe Allen	50	360
Roy & Co., 5 A. B. Willoughby	20	442
W. A. Henson & Co., 12 M. J. Lewis	25	175
Friends Oil Co., 12 Mitchell	50	190
W. A. Kiser & Co.:		
16 J. I. Shelton	*	350
17 J. I. Shelton	100	350
N. T. Stondt & Co., 1 W. H. High	40	1362
Wood County—		
Greenwood Oil Co., 4 C. M. Davis	30	1639
Lee & Co., 6 E. Ricker	5	1312
Hancock County—		
David Bushey, 7 Paul Gohlke	15	1342

NEW DEVICE PROTECTION AGAINST GAS BLOWOUTS

Houston, Texas, Sept. 13.—A device known as the "guy wire slide" to be used as protection against violent gas blowouts that endanger the lives of derrick men is being tested at Orange.

This new contrivance is placed at the top of the derrick, the climber puts one leg into a metal loop and the speed of the descent is controlled by a hand brake. In this manner one is able to reach the floor from the top of a 112-foot derrick in a few seconds.

Kentucky Operators Turning to New Shallow Pool Southwest of Scottsville

WINCHESTER, KY., Sept. 11.—Extreme heat throughout the Kentucky fields brought about an exceptionally poor week, as laborers could not withstand the conditions, hence, but few completions reported. In the extreme eastern part of the State, in the Big Sandy Valley of Lawrence, Morgan, Johnson and Magoffin counties work was at a standstill, not one completion being reported.

The most important development of the week was made in the Scottsville field, in Allen County where many of the operators are flocking in hopes of being able to get possession of some of the wonderful shallow territory in the vicinity of the No Name pool, southwest some four miles from Scottsville, in the vicinity of the Mitchell lease, which is considered the best proposition in Kentucky, the oil being found at very shallow depths and the wells large, and maintain their output in a surprising manner.

Allen County is now the mecca of the oil people which have made Bowling Green, in Warren County, their headquarters for the past two years, but that field appears to be going backward and Allen County is the gainer. There is still room for many more productive pools in Allen, Warren, Barren and Simpson counties, and there is much leasing at this time in the western half of the State, in Metcalf, Hancock, Davis, Meade and Hardin counties. In the central part, Cumberland, Clinton and Russell counties are in for an active drilling campaign, but much depends upon the decision of the Paragon Development Company whether or not it will put in a pipe line to handle the Cumberland County product.

The Indian Refining Company is laying a pipe line from its pump station at Owensboro to the development in Daviess and Hancock counties and will no doubt continue the line on to the Warren, Allen ad other Western Kentucky producing counties.

Numerous large deals for production and acreage are about to be closed, which will mean much for Kentucky in general.

Illinois-Indiana Fields Remain Unusually Quiet

Vincennnes, Ind., Sept. 11.—Outside of the development in the Centralia townlot development in Marion County, Illinois had practically but one completion, and the Centralia field is the only thing that is keeping Illinois on the oil map at this time, as good flush wells are being found from day to day in two sections of land and upon the town plat of Centralia at a depth averaging around 775 feet. J. C. Boles & Company brought in a 150 barrel flush well in the Centralia pool, in No. 3 on the Roewenskamp lease, section 19, Centralia township. Five other wells at 60, 70, 75 and 90 barrels were drilled in the pool, and two dry holes along the outer edges. Outside of the Centralia completions there was one well completed in the Casey field of Clark County, with only a barrel a day.

Much attention is attracted to an important wildcat well being drilled by the Ohio Oil Company in Edwards County to the southwest of the Allendale field of Wabash County, and the famous Bridgeport field of Lawrence County, Illinois, and located some over two miles northwest of the town of Bone Gap, a small hamlet along the Illinois Central railroad. This well has reached a depth of 2230 feet, but the owners do not expect to find a pay sand above 2500 feet where there is chances for the striking of some of the well known sands encountered in the Bridgeport field, such as the Buchannan, Kirkwood, Ridgley, Green, Stray or McCloskey sands. If none of those sands show production an attempt will be made to drill the test to the Trenton Limestone formation, which naturally will be found at a depth around 3000 feet and possibly at a shallower depth, as wells are producing from the Trenton in the Waterloo field in Monroe County on the west side of the State at around 500 feet. A large block of leases have been secured there by the Ohio Oil Company, the Indiana Refining Company and Edward Craig, an old time operator, and two additional wells will be drilled. One will be some over a mile northwest of the Ohio's test and the other about 3 miles northeast of Bone Gap.

ILLINOIS COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Clark County—		
Stohr Bros., 1 John Sloan	1	510
Marion County—		
Miller, Mackey & Co:		
1 Quillman & Spethman, Blk 10	75	778
1 Quillman & Spethman, Blk 1	90	778
J. C. Boles & Co., 3 Roewnkamp	150	778
Hefter, Joy & Co., 3 Gaston	60	774
Five Star Oil Corp., 1 Draege Lot	70	781
Bateman Bros., 1 D. Johnson	*	775
Mt. Carmel Oil Syndicate	*	812

INDIANA COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Pike County—		
Mid-West & Gulf Oil Corp., 1 W. H. Phillips	*	1474
Gibson County—		
J. S. Young Jr., Estate, 1 M. Roberts	*	900
Consolidated Oil & Dev. Co., 1 J. McLemore	*	1761
Murphy Oil Co. of Penn., 5 Frederick	2	820

Frank McNight of the Arkansas Natural Gas Company was in Casper last week on business connected with his company.

Rounding Up Radicals In California Fields

Los Angeles, Cal., Sept. 9.—What is regarded as a final desperate effort to drive a wedge into the very satisfactory relationship between the oil companies and their employes in this state, is seen in the operations of alleged I. W. W. organizers and propagandists in several of the fields.

Since the strike of oil field workers last year, California fields have been especially free from labor troubles, and it is generally held by operators and workers alike that the days of serious labor troubles are ended. Recent efforts on the part of radicals is regarded as a last desperate effort to keep alive animosities which might be able at some time to create an issue between the companies and their field men.

Nineteen alleged members of the Industrial Workers of the World were arrested at Taft last night when a raid was made on their meeting place, according to an Associated Press report this morning. It is said that all but one of the men arrested admitted that he was a member of the organization. Taft is the headquarters for oil development in the Midway-Sunset district, the main producing area of the Valley fields.

One man was arrested at Long Beach last week, said to have had $1,000 worth of literature in his possession, and also reported to have been making an effort to organize oil field workers. He was charged with criminal syndicalism. Another alleged I. W. W. member was arrested at Los Angeles harbor.

For sometime it has been reported that radicals are trying to get a foothold in Kern County fields and at Long Beach. It is recognized that their efforts are frowned upon by the majority of the field men.

Los Angeles, Cal., Sept. 9.—Pacific Petroleum Products Company of this city will build a refinery at Long Beach to process crude produced in the Long Beach field, according to an announcement today. Several of the independent companies in this district are figuring on putting topping or skimming plants at Long Beach.

Los Angeles, Sept. 9.—E. J. Miley completed his first well for the Pacific Petroleum Company at Santa Fe Springs yesterday, good for 2500 barrels a day. Standard Oil Company is making connections.

This well brings the daily production of the Santa Fe Springs field to 38,000 barrels.

Los Angeles, Cal., Sept. 9.—Twenty-nine new wells will be drilled on notices filed with the Oil and Gas Supervisor last week. The previous week saw 22 notices to drill filed. A total of 933 wells have been started in California this year, where the same date last year saw 990 wells started.

Crude Oil Is Moving from Points In California to Atlantic Coast

LOS ANGELES, CAL., Sept. 9.—Some encouragement to oil producers on the West Coast have been afforded by the establishment of connections whereby at least one and maybe several of the major refining companies of the Atlantic Coast will draw upon California for crude oil.

It was reported a month ago that some crude was moving from California to New Jersey, though it was not considered significant at that time. During the past ten days, however, at least one other major interest in the East sent tankers to the Pacific for California crude, and it is reported on good authority that other of the bigger Eastern refiners are putting out inquiries to determine just how much California crude is available and at what figure.

The theory is held here that this movement is the result of declining production in Mexico. Just why the Eastern refiners do not supplement their supply of crude from the Mid-Continent is a question on which there is a difference of opinion.

The gasoline producing crudes in California are as high or even higher in price than in the Mid-Continent. The additional ocean haul, from the Pacific Coast, would probably more than offset the pipe line transportation charges, especially if the Mid-Continent crude were delivered to Gulf ports for shipment. It is not a question, therefore, of getting cheaper crude for the purpose of meeting a demand for gasoline.

With most crudes in California being of napthene base, it is not believed that their purchase by Eastern refiners is for their lubricating oil content. Although a considerable amount of napthene base lubricants are used in the East, especially for blending with eastern oil to perfect low cold test, winter automobile oils, yet it is pointed out that this oil, already refined, could be purchased in the West and shipped at a much less expense than in handling the crude.

The most generally accepted theory at this time is that California crude is being bought to supplement Mexican oil, from the Panuco district, because California crudes compare favorably with this oil in quality, and it is the fuel oil that is wanted by Eastern refiners, to meet outstanding contracts through the fall and winter.

Those who hold this theory point out that the crude oil now produced at Long Beach and Santa Fe Springs is already close to a loading port; that it contains enough gasoline to make it profitable to refine, and yet gives sufficient fuel oil by volume to make it possible for Eastern refiners to run it without changing or upsetting their programs established for Mexican light oil; and further, there seems to be an endless supply of crude from these new fields in California; and the loss of production in Mexico put a lot of tankers on the idle list, so that they could be turned into the Pacific to Atlantic traffic very profitably.

This movement of crude oil to the East Coast is being watched closely by Californians, and it is hoped that it may serve to lighten the load on California producers in case the traffic gets sufficient in volume.

Production of Crude Is Growing in California; No Curtailment in Sight

LOS ANGELES, CAL., Sept. 9.—"The big companies have shut down the stuff they own in the Valley Fields, and are drilling out the leased stuff in the southern district."

The above statement of a driller at Santa Fe Springs this week, a man who recently came from the San Joaquin Valley fields, sums up in a general way the situation in this state. Though the center of activity has been shifted to the south, there is no indication of a letting up in drilling operations.

August production figures are expected to show the highest daily average ever recorded in California. And present indications are such that as much or more flush production will be added in September than in August.

It is said that there are 275 rigs up in the Long Beach field—including all wells producing, drilling and preparing to drill. One hundred and fifty wells are drilling, and last week 15 derricks were erected, or began erection.

At Santa Fe Springs things move slower because of the great depth of the oil sands. But this field once under way is expected to lead the world in actual single-field production. It may take it six months or a year to reach anything like maximum production.

At this time something like a dozen wells are nearing completion in the proven area at Santa Fe Springs. General Petroleum has three wells nearly ready to complete. Amalgamated, Standard, Union and Shell all have near completions, as well as many smaller companies.

Among the new wells just completed at Long Beach are the following: Shell Company's Alamitos No. 3 and Nesa 2; Apex Petroleum Company's No. 2 for 2500 barrels; Calmont Oil Company's No. 1 for 2500 barrels; Dabney's No. 6 for 1600 barrels. A number of wells are ready to drill out the cement and add to the list of completions.

Standard Oil Company has done a lot of pioneering to the south of the Long Beach field, with no satisfactory results. It has one well now drilling, Alamitos 1, below 5700 feet.

Amalgamated has completed Kammerer 4 at Richfield for 500 barrels at 3365 feet, 17 gravity oil.

Four Day Cementing Process Is Available

New idea involves use of chemical re-agent, making cement set quickly

LOS ANGELES, CAL., Sept. 9.—The Perkins Oil Well Cementing Company of California has secured the Huber patent on a four day cementing process, and will extend its service to all the fields of the country.

This "four day cement" involves the use of a chemical re-agent, applied to the regular cement, which makes it set quickly, and makes it possible to drill through to the oil sand within four days after the cement has been run in. In fact in the rotary fields it is claimed that there will be no loss of time due to cementing as the water shut off will be complete, and the cement ready to drill through, by the time one string is broke out and the other set up.

The Perkins Oil Well Cementing Company has a fleet of 15 trucks specially equipped for cementing jobs, in California. The company cements about 90 per cent of the wells drilled in this state.

In the use of the chemical reagent, which comes in a solidified state, and is dissolved in the water which is used in mixing the cement, the company will make a charge of $50 as a fee, to go to the owner of the patents in the form of a royalty, and then charge a small sum based on the number of sacks of cement used.

The company has its own crews, which work in conjunction with the regular well crews, and with the use of the specially equipped trucks, it makes short work of the cementing job.

Process Explained

Details of the new process, together with a technical discussion of the chemistry involved in the reagent and its activity, have been given The OIL WEEKLY by the Perkins Company, as follows:

The greatest menace of all oil fields is water. How to properly exclude water from oil or gas bearing zones is for the operator one of his greatest problems. So far the best method found has been cement but cases arise where it is difficult to get the cement to properly harden. If a string of casing has been cemented and the job is unsuccessful through faulty setting of cement, the loss to the operator is enormous. It takes normal cement from two to four weeks to harden and during this time the well must be left idle and the crew laid off or used elsewhere. This results in much lost time and money to the operator.

A method has recently been devised wherby lost time is eliminated and the hardening of the cement under adverse conditions, such as gas and oil or salt and acid waters, can be assured.

This is accomplished by a chemical reagent which is added in fluid form to the cement during mixing. This reagent hastens the hardening of the cement but does not disturb its set. The final strength is greater than normal untreated cement and there is no deterioration in the strength of the cement as its age increases. Instead of letting a well stand from 14 to 30 days the use of this reagent cuts the time to 4 days.

This process has been secured by the Perkins Oil Well Cementing Company and is being generally used in the Signal Hill and Santa Fe Springs fields with entire success. These fields have heretofore presented unusual cementing difficulties owing to the fact that in many of the jobs much gas and oil has been present.

A report on this reagent by the inventor, F. W. Huber, follows:

Setting and Hardening

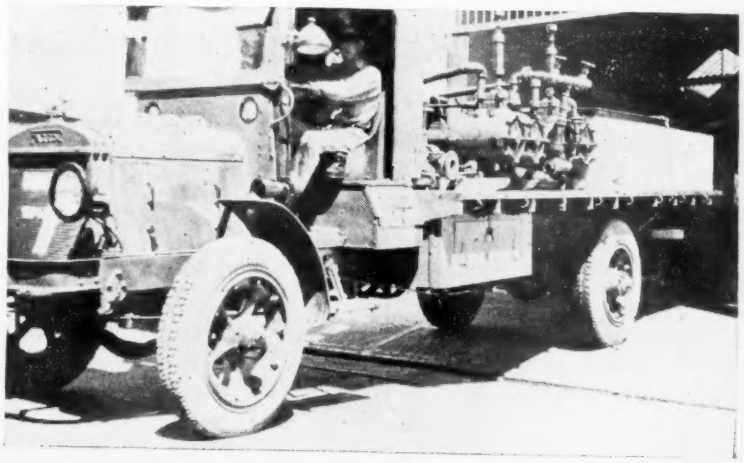
The time consumed in waiting for cement to harden sufficiently in a well to make a test for water shut off, is at the present day no inconsiderable factor. At first glance, it might appear to those not intimately familiar with the chemistry of cement, that the time could simply be reduced by using a quick setting cement. Setting and hardening are, however, two very distinct chemical processes. A quick setting cement, as a general rule, is not a quick hardener. To make clear this distinction, a closer glance at the chemistry involved will perhaps be illuminating. Portland cement clinker is essentially a solid solution of various calcium aluminates in tri-calcium silicate, much in the same way as steel is a solid solution of iron carbide in iron. Before grinding, Portland cement clinker possesses no hydraulic properties—it can be stored under water for an indefinite period without "setting up." Upon grinding to more or less of a powder, it develops only a part of its strength but the product is very quick setting, and develops only a part of its strength possibilities. In order to regulate the set up to 5 per cent of gypsum (calcium sulphate) is added. This not only controls the setting time, but develops the normal strength. This action of gypsum upon the ground cement was not understood until quite recently. A normal cement can very easily be made quick setting by merely neutralizing the gypsum, but in doing this, the development of the strength is seriously interfered with.

First Reaction

When a normal Portland cement is gauged with water to a putty like mass, the first reaction taking place is the hydration of the tri-calcium aluminate which separates as a colloidal mass. It is the coagulation of this hydrate which produces the first stiffening of the putty—this is the initial set, and is in fact, merely the absorption of the contained water and its partial fixation. At the same time there is formed a complex compound between the hydrated alumina and the calcium sulphate. This compound possesses the remarkable property of bringing about the hydration of the chief constituent of the cement, i.e., the tri-calcium silicate. It is to the hydration of this tri-calcium silicate, that Portland cement mortars owe their strength. This hydration is a comparatively slow process extending over a number of weeks. It does not begin until after about twenty-four hours. These reactions can all be followed under the polarizing microscope. The microscope further reveals that after hydration is complete, the calcium sulphate reverts to its original state, and from then on is but an inert constituent of the hardened cement. Such a substance which brings about a reaction, but does not enter as a combination into the end product, is termed a catalyst.

Knowing the reactions which produce

(Continued on Page 63)



Big Fageol truck, equipped with pumps, mixing tank, tools, etc., for cementing jobs. Perkins Oil Well Cementing Company has 15 trucks with similar equipment ready to go at call to any field in California and the company does the cementing work for nearly all the wells drilled in that state.

MEXICAN CRUDE PRODUCTION

The daily average production of crude oil in the Mexican fields the past two weeks is divided about as follows:

	Week Ending Sept. 2	Aug. 26
Cerro Azul-Toteco	130,000	137,000
Terro Blanca	45,500	48,000
Central Amatlan	28,000	28,000
Potrero del Llano	18,000	27,000
Molino	.....	13,000
San Geronima	10,600	11,000
Los Naranjos	9,700	21,000
Chinconcillos	5,000	6,000
Tepetate-Casiano	8,000	8,000
Alamo	3,100	4,000
Total light oil	267,900	293,000
Panuco District—Heavy	121,000	121,000
Total Mexico	388,900	414,000

Interocean Oil Company Changes Management

Tampico, Tamps., Sept. 9.—Effective October 1 the Interocean Oil Company will change its entire management and will be under the direct supervision of the Pulford Brothers. New officers of the company are R. G. Pulford, president; W. J. Pulford, vice president; Peter Wright, treasurer and Adolfo Harrisch, secretary.

The home offices of the company are maintained in New York and a refinery is operated at Baltimore which is supplied by the company's tankers from Mexico.

At Tampico the company operates a terminal and engages in the buying and selling of Panuco crude.

Robert Keeler, sales manager of the Dallas office of the Pure Oil Company, was a business visitor in Wichita Falls early this week.

Transcontinental Outlines Drilling Campaign at Cacalilao Near Panuco

TAMPICO, TAMPS., Sept. 9.—Following the completion last week by the Transcontinental Petroleum Company of a 2500 barrel well in the Cacalilao pool of the Panuco district, the company has secured permits and announces one of the largest drilling campaigns in the history of the heavy oil district.

The Transcontinental has twelve locations on the Cacalilao hacienda and permits have been granted for the drilling of ten wells. Work on a number of these tests is to be started at once and it expected to have at least a half a dozen rigs running in the next few weeks. The company's numbers 3 and 4 on fraction 5 are already drilling.

The new work will be centered in fractions 3, 4 and 5 of lot 4. The company's Nos. 1 and 2 on fraction 4 have already been completed and are good for a combined production of about 3,500 barrels. Wells Nos. 5, 8, 9 and 10 will be drilled along the southern line of fraction 4 or just across the northern line of 3. It is in this district that the Mexican Petroleum Company has its big producers. The Transcontinental will also drill wells Nos. 6 and 7 on fraction 3 and one well on fraction 5 of lot 3.

Five miles from the Cacalilao production the Transcontinental is now working on a wildcat well on the hacienda Paciencia. The well is located on the San Luis railroad on the northern part of the hacienda of which the Transcontinental and the Penn Mex companies jointly own about half.

Another Good Well for Isthmus of Tehuantepec

Tampico, Tamps., Sept. 12.—The Mexican Petroleum Company's Concepcion No. 22, Minatitlan in the extreme southern portion of Vera Cruz has been completed for a flow estimated at 3500 barrels. Production is coming from a total depth of 3005 feet. The well blew in making large quantities of gas, sand and oil. The oil tested 27 gravity.

Concepcion 22 is located near the Uxpanapa River about 40 kilometers from the coast and about 10 miles from the Aquila refinery at Minatitlan. It is an offset to Concepcion 18 which was completed by the Mexican Petroleum Company last year but which is not producing at present.

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Mexican Exports Show Slump During August

Shipments last month totaled 13,948,850 bbls., decrease of more than 3,000,000 bbls.

TAMPICO, TAMPS., Sept. 9.—Exports of crude oil and other petroleum products from ports of Mexico reached a total of 13,948,850 barrels during August, a decline of more than 3,000,000 barrels when compared with July shipments. Exports in August were smaller than for any month in the year and further declines this year are expected.

The Huasteca made shipments totaling 3,510,330 barrels, only about 4000 barrels under shipments in July and exceeding total shipments any month in the year except January and July. Stocks are being drawn upon to hold up shipments to the present total and since production is off in all sections, declines are natural and expected.

Only five companies exported more than 1,000,000 barrels and three of these companies have production in the Cerro Azul-Toteco district, the last big pool and which is fast declining as salt water encroaches.

Shipments by companies from Mexican ports each month this year follow:

Company—	August	July	June	May	April	Mch., 1922	Feb., 1922	Jan., 1922
Huasteca	3,510,330	3,514,655	3,195,855	3,245,190	3,017,920	2,969,905	2,550,840	3,556,344
Transcontinental	560,570	1,077,860	1,532,050	1,903,715	2,077,230	2,878,940	3,052,550	3,499,428
Aguila	1,628,210	1,884,075	2,325,430	2,195,390	2,453,925	1,697,565	1,932,230	2,110,551
International	1,057,345	1,858,590	1,452,355	1,802,695	1,441,570	1,550,285	1,887,320	1,655,147
Corona	1,665,085	1,626,640	2,019,055	1,843,105	2,005,500	1,429,170	1,355,730	1,169,289
Mexican Gulf	1,196,800	1,670,570	1,156,195	1,874,325	1,959,220	1,386,890	1,423,585	1,533,784
Agwi	650,990	560,045	411,200	880,905	1,242,930	941,045	473,505	622,820
Freeport	699,285	752,505	757,670	573,270	1,079,230	862,785	1,062,880	688,287
Texas	690,055	909,955	982,705	931,945	666,165	731,150	1,116,790	877,723
Cortez	170,555	773,590	911,370	997,040	377,575	680,445	1,845	372,306
National Oil	.....	.....	.....	.....	155,410	443,965	140,030	152,789
East Coast	396,580	525,930	382,500	358,695	430,730	414,510	472,695	341,923
New England	174,740	324,655	375,015	486,175	287,860	408,115	302,730	418,469
Penn Mex.	.....	627,895	757,760	595,800	265,900	190,075	188,340	75,858
Pierce	94,550	261,820	46,270	26,075	66,160	181,680	111,960	115,685
Nat. Petroleum	259,000	174,065	73,055	135,610	186,935	146,425	95,800	105,945
Island	236,395	313,815	206,605	499,850	72,195	136,290	378,025	755,752
Continental Mex.	449,955	141,480	69,415	92,555	65,055	123,330	.....	126,467
U. S. Mex.	109,230	50,230	50,115	95,900	100,790	51,325	194,235	250,177
Interocean	57,870	.....	101,150	50,505	50,220	50,165	50,640	152,845
Swiftsure	334,390	48,820	.....	.....	.....	.....	60,740	132,300
Tal Vez	53,915	60,620	121,095	.....	.....	.....	.....	.....
Panuco-Boston	.....	.....	.....	.....	60,860	.....	.....	.....
Cosmos	.....	.....	37,615	.....	.....	.....	.....	.....
Total	13,948,850	17,157,815	16,964,480	18,588,745	18,063,380	17,274,060	16,852,470	18,363,980

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WILDCATS FROM ALL SECTIONS

Northeast Texas Wildcats

COMPLETIONS

Marion County—

Monterey Lake Oil Co. Woods 2 . . . . . * 2500

Universal Pet. Co. State 1.... * 2395

DRILLING REPORT

BOWIE COUNTY—Fitzhugh et al's Rochelle 1, dr 1485 ft. Tri-State Oil Co.'s Taylor 1, set 8-inch 2260 ft.

CASS COUNTY — Callson-Price Pet. Co.'s Spears 2, sd 2295 ft. Hughes Springs Synd.'s Stovall 1, dr 2150 ft.

HARRISON COUNTY—R. H. Hale et al's Harris 1, sd 4040 ft. Snelling et al's State 1, sd 2635 ft. Universal Pet. Co.'s Bivens 1, sd 2910 ft.

MARION COUNTY—Lakeshore Oil Co.'s Zachary 1, waiting on bench to set 2515 ft. Lucas Oil & Dev. Co.'s Blocker 1, sd 1495 ft. Pettit Oil Corp.'s Rives 1, std rig to pump 2210 ft.

PANOLA COUNTY—Bethany Oil & Gas Co.'s A. Jernigan B-202, sd 2395 ft; Gully 209, dr 2850 ft; Crenshaw 211, dr out plug 570 ft. Galloway et al's Edon 1, sd 3140 ft. H. C. Morris Trustee's Lewis Werner 3, dr out plug 1845 ft.

SHELBY COUNTY — Catchart-Texas Oil Co.'s Holt 1, sd 3295 ft.

Coastal Wildcats

COMPLETION

Harris County—

Gulf Prod. Co. Warren 18.... * 1050

DRILLING REPORT.

ANDERSON COUNTY—Hudgens et al Turner 1, dk. Old Colony's Graham 1, lcn. Palestine Oil & Dev. Co.'s Hugo Monnig Plantation 1, dr 1200 ft. J. E. Winans et al's Parker 1, fsh 1500 ft. Roeser Pet. Co.'s Brooks & Auld 1, set cas. 3400 ft.

BASTROP COUNTY—Smithville Drilling Co.'s Adanchick 1, fsh 1000 ft. Triangle Oil Synd.'s Fritag Valenta 1, dr 1650 ft. J. W. Watson et al's Tom Watson 1, sd 430 ft. J. A. Mitchell et al's Ramsey 1, dr 1180 ft.

BELL COUNTY—Nolan-Bell Oil Co.'s Bacon 1, to sdtr 2155 ft. J. B. Hartman's Warrick 1, sd 2335 ft.

BRAZORIA COUNTY—E. R. Mallory et al's Emmett 1, breaking down drill stem 2075 ft. Rancho Esabella Synd.'s Rudiger 3, sd 2800 ft. Mustang Oil Synd.'s Allison 2, dr 3400 ft in gumbo. Oliver Hall Oil Corp.'s Hall 1, sd 1990 ft. Atlantic Prod. Co.'s Strobel 1, sdtr 2200 ft, dr 2820 ft. Reed Dev. Co.'s Jamison 1, waiting on 3-in drill stem 3200 ft, have had small showing of oil. Transcontinental's Breen 5, dr 3510 ft. Faust et al's Faust 3, dr 2650 ft. Wilkerson Oil Assn's 1, located 700 ft. south of north line and 700 ft west of east line of Croessus Oil Co.'s lease, lcn.

BRAZOS COUNTY—Warren Oil Co.'s Mooring 1, sd 4320 ft. Cobbs Bros.' Williams 1, sd 2380 ft. Two Rivers Oil Co.'s Tabor 1, sd 1870 ft.

BURLESON COUNTY—Frank Balcer et al's Marek 1, sd 1440 ft. Caldwell Pet. Co.'s Speckman 2, dr 1565 ft. Federal Prod. Co.'s Giesenchlag 3, sd 900 ft. Swastaca Oil Co.'s Rogers 2, dr 1025 ft. Chriesman Oil Co.'s Phelps 1, sd 900 ft.

CALDWELL COUNTY—United North & South Oil Co.'s Cartwright 4, bailing 2300 ft.

CAMERON COUNTY—Rio Grande & Gulf Co.'s Champion 1, sd 4690 ft.

CALHOUN COUNTY—World Oil Co.'s Ruth 1, sdtr drill stem at 2250 ft., td 3198 ft.

CHAMBERS COUNTY—Thorning et al's LaCour 1, sd 2440 ft.

CHEROKEE COUNTY—Colliton Oil Co.'s Clapp 1, dr 2675 ft.

COLORADO COUNTY—Columbus Bernado Oil Corp.'s Kaiser 1, sd 985 ft.

ELLIS COUNTY—Beecher et al's Witherspoon 1, dr 3380 ft. Rolck-Banday's Hoosier 1, sd 1000 ft.

FALLS COUNTY—Mayflower Oil Co.'s Covington 1, dr 2275 ft. Highbank Oil Co.'s Peacock 1, sd 1625 ft. Penn

Dalton Well in Palo Pinto Has Proved Costly to Oil Companies

FORT WORTH, TEXAS, Sept. 12.—Although the Dalton Oil Company's wildcat producer on the R. S. Dalton ranch in Palo Pinto County, which came in last April with an initial flow of 1200 barrels natural at 3965 feet, continues to flow at the rate of 530 barrels daily and has been an exceptionally profitable well to its owngrs, it has led up to some costly and disappointing drilling on the part of a number of operators attempting to tap the same pay formation. The five tests located to the north, west and south of the producer that have been reported as being below the 4000-foot level for the past two weeks are about to be abandoned as dry holes by their owners. Two of these tests were given shots last week in the formations where showings of oil and gas were obtained, but neither developed into producers.

For three weeks after the Dalton well began flowing leasing activity was exceptionally brisk and acreage changed hands at almost prohibitive prices, mostly due to the performance of the well in flowing continually and making high gravity crude. Along with the high priced acreage as a starter, the operators desiring to drill tests were forced to expend large sums in delivering materials and equipment to their drilling sites, owing to the remoteness of the territory from the base of supplies. Then the amount of casing necessary in a hole and actual cost of drilling to the producing horizon boosted the gross cost of a test far out of proportion to that of the average deep fields in North and Central West Texas.

The first test to be given up after drilling below the expected pay depth is Owens & Burkett's No. 1 Pennington, located less than 3000 feet west and on the side of a hill from the Dalton producer. The Pennington test was given a shot of 120 quarts from 4295 to 4325 feet, without showing either oil or gas in commercial quantities. This well was drilled to 4390 feet, and reported 10 feet of sand with showing of oil from 4300 to 4310 feet. The Magnolia Petroleum Company's No. 1 Turner-Green, located about half a mile due north of the Dalton discovery well, showed only a small amount of oil and gas after shot of 20 quarts from 3998 to 4009 feet, where a favorable looking formation was encountered while drilling. This test has a total depth of 4135 feet, and may be drilled to 4500 feet, if the lost string of tools in the hole can be recovered in a reasonable length of time.

Dalton pool operators are hopeful of the untested territory to the east of the producer proving productive, while others have not forsaken their tests underway in more remote distances from the well. Late last week, in addition to the five tests that have passed through the horizon that the Dalton pay was expected, there were eight drilling wells, with four below the 3500-foot level; two shut down below 1000 feet; and seven rigs up and awaiting developments.

The shallow Moran field in the southeast corner of Shackleford County contributed two additional producers when The Texas Company completed wells Nos. 5 and 7 on the J. H. Arnold tract in Section 31 of the University Lands Survey. No. 5 came in flowing natural at the rate of 60 barrels daily from 12 feet of oil sand picked up at 565 feet, while the other is pumping 20 barrels of oil and some water from eight feet of sand found at 543 feet. The Ibex pool, located north of the Moran field in the same county, reported two new locations last week. The Texas Company will drill an offset to the test being sunk by the Empire Gas and Fuel Company on the Brazzell. This offset is on the Tankersley farm in Section 53 of the Blind Asylum lands. E. A. Landreth & Company of Breckenridge is rigging up for a test to be drilled on the Wm. Poindexter farm in the north half of Section 27. This will be an offset to the Humble Oil and Refining Company's No. A-1 Poindexter.

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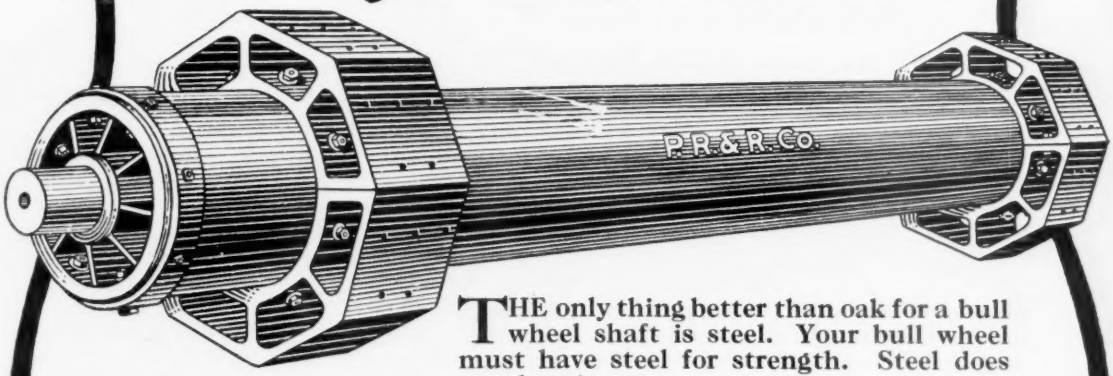

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Duncan
Henryetta
Wilson
Hominy
Okemah
Okmulgee
Pawhuska
Slick
Tonkawa
Barnsdall

Texas Leasing Synd.'s Bargamer 1, sd 2140 ft. Texalo & Hill Oil Co.'s Harlan 2, dr 1850 ft. Balto-Texas Oil Co.'s Price 1, rigging up. Denny-Mexia Co.'s Knapp 1, dr 3600 ft. Pearce Pet Co.'s Clark 1, dr 2690 ft.

FORT BEND COUNTY—Iona Oil Synd.'s Moore 1, at Moore's Mound, sd 2890 ft; Hellmuth 1, dk. Gulf Prod. Co.'s Wheat 1, flowing 65 barrels at 560 ft; Davis 2, dr 3260 ft; Wheat 3, rigging up. Belvedere Synd.'s Belvedere 1, sd 3500 ft. Big Creek Oil Co.'s Moore & Hager 1, dr 1600 ft. Richmond Fort Bend County Oil Synd.'s Bryan 1, dk. Neilan Oil & Ref. Co.'s Gubbels 1, r 1975 ft, td 2250 ft; Brown 1, dr 2000 ft. Gulf Devel. Assn's Voegele 1, dr 1050 ft; Peckham 1, lcn. Lee et al's Ahlers 1, dr 1175 ft. L. W. Wright et al's Booth 1, dk.

GALVESTON COUNTY—Sun Co.'s Cade 4, oil standing 1500 ft in hole, to pump 2435 ft. Texas City Oil Corp.'s Logan & Cook 1, sd 700 ft. The Pioneer Oil Co.'s Johnson 1, rigged up.

GONZALES COUNTY—H. W. Brewer et al's Winn 1, set 12½-in cas 200 ft. Pioneer Oil & Gas Co.'s Patterson 1, sd. waiting on water 1225 ft.

GRIMES COUNTY — Navasota Oil Co.'s Vickers 1, sd 3200 ft. Terry Dev. Co.'s Upchurch 1, sd 685 ft. King & Olsen's Stephens 1, sd 3495 ft.

HARRIS COUNTY—Texas Exploration Co.'s Warren 5, set cas 4300 ft; Warren 7, dr 500 ft. Thomas Oil Corp.'s Bender 2, dr 1750 ft. Betty Lee Oil Co's Neese 1, sd 1870 ft. Tar-Tex Oil Co.'s Stewart 2, sd 2350 ft. The Humble Gulf Coast Oil Co.'s Dunks 2, sd 3200 ft. Willow Mound Oil Co.'s Gebhart 1, changing draw works 2200 ft. Garrett Oil Co.'s Townsite 2, dr 2875 ft. Gulf Prod. Co.'s Warren 19, rigging up. Ship Channel Oil Co.'s Atkinson 2, rigged up and sd. Giesecke et al's Giesecke 1, dr 2450 ft. Monarch Oil & Ref. Co.'s Hautier-Moyle, located one and one-half miles east of Greens Bayou, 280 ft. north of southwest corner lot 24, J. W. Moody survey, 2000 ft. south of Houston-Crosby road, dr 625 ft. Texas Southern Pet. Co.'s Riden 1, sd 3270 ft.

HARDIN COUNTY—Gulf Prod. Co.'s Mayo 1, dr 3300 ft. Votah Oil Co.'s Swift 1, sd 2120 ft.

HENDERSON COUNTY—Haynes et al's Woods 1, sd for pipe 2675 ft. Jones & Vaughn Oil Corp.'s Martin 1, sd 2980 ft. Pine Grove Oil Co.'s Brown 2, sd for repairs 315 ft. Tidal Oil Co.'s Moore 1, dr 3585 ft. Union Pet. Co.'s Smith & Logan 1, dr 3075 ft.

HIDALGO COUNTY—La Lomita Oil Synd.'s La Lomita Hill 3, dr 1325 ft. Dale L. Smith & Co.'s Fernandez 1, sd 2875 ft.

HOUSTON COUNTY—Porter Oil Co.'s Austin 2, sd 2395 ft. California Oil Co.'s State Eastman 1, repairing rig 1900 ft. La-Tex Oil Co.'s Driskell 1, sd 1420 ft.

JACKSON COUNTY—Jackson County Oil Synd.'s Drushell 2, sd 2600 ft; Fuqua 1, sdtr 2200 ft. J. W. Young's Henley 1, sd 160 ft. Vanderbilt Pet. Co.'s Koop 3, r below 3100 ft. Star Pet. Co's Crabb 1, sd 14 ft.

JEFFERSON COUNTY—Houston Oil Co. moved rig of pipkin 1200 ft southeast and made location on Pipkin 2, Ball Ridge Pet. Co.'s Tyrell 1, sd 3140 ft. Seaport Pet. Co.'s Emly 1, dr 4195 ft. Wilson Oil Co.'s Broussard, rigged up and sd.

LAVACA COUNTY—Hillja et al's Hillja 2, sd 1245 ft. Lavaca Co. Oil Co.'s Laass 1, dr 2075 ft.

LEON COUNTY—D. & P. Synd.'s Heath 1, rigged up. Lang & Brown's Bolder 1, sd 2765 ft.

LIBERTY COUNTY—Whaley-Cove Oil Co.'s Neils 1, sd 1010 ft. Fairchild Pet. Co.'s Peeler 1, dr 3130 ft.

LEE COUNTY—Austin Oil & Gas Co.'s LeMaster 1, sd 1300 ft. Frank Butram et al's Hatfield 1, sd for repairs 1175 ft.

MADISON COUNTY—Stone King Stipe's Jones 1, sd 1800 ft. R. S. Ayers & Currie's Herring Estate 1, sd 1665 ft. Hewell et al's Martin 1, sd 1800 ft. Larson & Bloom's McIver 1, sd 700 ft. Midway Oil Co.'s Sea 1, rigging up.

MATAGORDA COUNTY—Cooper Pet. Co.'s Culver 1, sd 3200 ft. Economy Oil Co.'s Taylor 1, sd 3850 ft. Texas Gulf Sulphur Co.'s Big Hill Townsite 1, sd 1450 ft; Bill Hill Townsite 2, dr 2395 ft.

McCLENNAN COUNTY—Foster Oil Co.'s Schnecker 1, sd 1660 ft. J. J. Kingsbury's Williams 1, sd 440 ft. Mexia Commonwealth Pet. Co.'s Holloway 1, sd 1160 ft. Tudor Oil Co.'s Shelton 1, sd 1950 ft.

MILAM COUNTY—S. A. Gueberson's Posey 1, sd 2400 ft. Tracy Mayfields Oil & Gas Co.'s Mays 1, sd 180 ft. Shaw Oil Co.'s Delworth 1, sd 1575 ft. Twin City Oil & Dev. Co.'s Bremond 1, sd 3400 ft. Norman Pet. Co.'s Watt 1, sd 1395 ft. Davis et al's Tracy 1, sd 795 ft. Milam Dev. Co.'s Moody 1, sd 1175 ft. United Workers Oil Co.'s Sneed 2, sd

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Mitchell County Test Stands 2600 Feet in Oil

Fort Worth, Texas, Sept. 12.—Wildcat operations in the West Texas Counties during the past week were centered around the Mitchell County test of Chal H. Daniels' No. 1 L. E. Lesure, located about two miles west of the town of Westbrook. This test was reported early this week standing with 2600 feet of oil in the hole with a total depth of 3098 feet, and preparing to run tubing to make a test of the pay. The top of the oil sand was picked up at 3015 feet, and it is reported that no gas was found with the oil. The owner of the well has announced that a shot will be discharged in the pay formation if the well only shows for a small pumper.

In Runnels County, the Runnels Production Company's No. 1 Russell is being completed as a small gasser at 2020 feet, and will be used to provide fuel for the drilling of a second wildcat test on the Russell farm. A rig has been erected for the second test, and will spud in shortly.

Andy Urdin and associates' wildcat test on the Parker farm in Taylor County was recently given a shot of 210 quarts in a lime formation from 3385 to 3445 feet resulting in a good show of oil but no gas. A bridge formed in the hole at 2745 feet after the shot, and is now being cleaned out.

A deep cable tool test is promised for the northeast corner of Schleicher County by the Paragon Oil Company on the B. M. Boyd ranch, located in the southwest quarter of Section 5 and about 30 miles northwest of the town of Menard. Materials and equipment are being delivered to the drilling site this week, and a contract has been let for a 3000-foot hole. It is planned to spud in before the end of the month. A number of the major companies and independent operators have taken on protection acreage around the test.

600 ft. Mexia Air Line Synd.'s Reed 1, sd 40 ft.

MONTGOMERY COUNTY—Tamina Prod. Co.'s McDermott 1, sd 1225 ft. Wilburton 1, repairing drum 1000 ft.

POLK COUNTY— Godley Oil & Gas Co.'s Polk County 2, sd 300 ft. Watner et al's Falkner 1, sd 2800 ft.

ROBERTSON COUNTY—Kentucky-Texas Oil Co.'s Walker Bros. 1, sd 3355 ft. Texas Central Pet. Co.'s Allen & McCrary 1, sd 3516 ft. Big Mexia Chief's Taylor 1, sd 1730 ft. Franklin Oil Co.'s Boyd 1, dr 4250 ft. Campbell-Logan-Hoover's Halloway 1, sd 3150 ft. Texas Union Oil Co.'s Moorehead 1, dk. Silver Bell Oil & Ref. Co.'s Brown 1, sd 3545 ft. Mud Creek Oil Co.'s Marquez 1, sd 3340 ft.

SABINE COUNTY—John Deering et al's Harris 1, sd 3500 ft.

SAN JACINTO COUNTY — Trinity River Pet. Co.'s Emery 2, sd 800 ft.

TITUS COUNTY—E. Beeler et al's Grogan 1, sd 1445 ft for dr stem. Western Oil Field Corp.'s Mitchell 1, sd 3500 ft.

VICTORIA COUNTY—Guadalupe Oil Co.'s Weaver 1, waiting on drill stem 3170 ft, are going to sdtr.

WALKER COUNTY—Prison Commission's Prison 2, dr 3310 ft. South Texas Prod. Co.'s Jones 1, sd 2400 ft. Union Oil Synd.'s 1, lcn. Lancaster-Dick et al's Eastham State Farm 1, dr 3050 ft. Currie et al's Ferguson State Farm 1, dr 3080 ft; Vivian 1, dk. Walker Maderson Oil Co.'s 1, resetting screen 2340 ft; 2, lcn. E. F. Simms Co.'s Thompson Bros.' 1, dr 3400 ft. Green et al's 1, on Anderson survey, dk.

WALLER COUNTY—Hulsey-Fletcher-Bailey Oil Co.'s Baines 1, sd 3275 ft.

WHARTON COUNTY—Hamilton Oil Co.'s Barkley 1, sd 3020 ft.

Texas Panhandle Wildcats

(NOTE—The drilling report below does not show wells that are shut down indefinitely.)

CARSON COUNTY—Gulf Prod. Co.'s J. I. Wynn 1, dr 3570 ft. W. W. Silk et al's S. B. Burnett 1, dr 3075 ft. The Texas Co.'s S. B. Burnett 1, dr 2840 ft. Tipton et al's McConnell 1, set casing 1975 ft

CHILDRESS COUNTY—Childress-Duluth Oil Co.'s Clutts 1, sd 3900 ft.

COLLINGSWORTH COUNTY — Campbell et al's Stokely 1, dr 1100 ft. United Oil Co.'s Hennard 1, dr 2880 ft.

GRAY COUNTY—J. Harvey et al's Brown 1, dr 3050 ft. W. W. Silk et al's G. W. Medley 1, dr 1110 ft.

HALL COUNTY—Craola Oil Co.'s Funston 1, sd 1080 ft. Home Peoples Oil Co.'s Barnett 1, co 2410 ft. Swenson Oil Co.'s Sexeours 1, sd 700 ft.

HUTCHINSON COUNTY — Coble Haywood Synd.'s Coble 1, sd 3740 ft. Gulf Prod. Co.'s Dial 1, dr 3435 ft. H. T. McGee et al's Smith-Cappers 1, sd for tubing 3166 ft. J. Whittington's R. Sandford 1, dk.

MOTLEY COUNTY—Minneapolis Oil Corp.'s Echols 1, dr 4704 ft.

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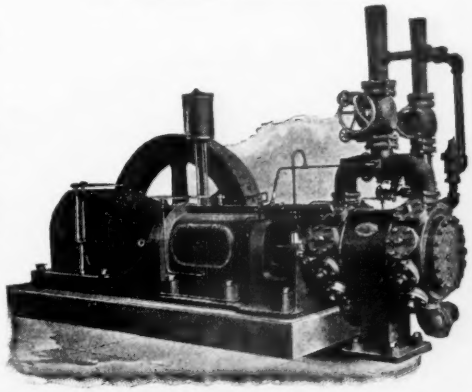

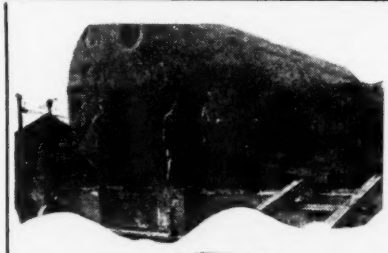

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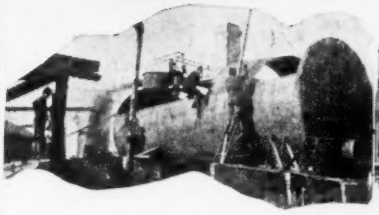


Tulsa Boiler and Sheet Iron Works

Box 1926 **TULSA, OKLA.**

North Texas Wildcats

COMPLETION

Company, well, location	Initial Production bbls.	Depth
Archer County—		
Texhoma Oil & Ref. Co. Netherton 1, ...	25	1603

DRILLING REPORT

NOTE—The drilling report below does not show wells that are shut down indefinitely.)

ARCHER COUNTY—Alfalfa Oil Co.'s L. C. Herron 1, dr 950 ft. Dee & Bellport's S. M. Cowan 1, dr 2880 ft. C. Evert's Veith 1, sd 1450 ft. F. & H. Synd.'s W. P. Ferguson 3, dk. Iowa Park Oil Co.'s W. Andrews 1, dr 613 ft. Kentucky Oil Assn.'s W. H. Taylor 1-A, r 1690 ft; Taylor 2-A, dk. Lipe et al's W. L. Andrews 2, dr 400 ft. Looney & Loper's L. F. Wilson 1, sd 915 ft. Maxon Oil Co.'s W. H. Taylor 2, dk. J. J. Perkins' J. Haggard 8, preparing to pump 1606 ft. Plate et al's R. E. Farmer 1, sd 1570 ft. J. I. Staley's J. Haggard 5, dr 1605 ft; Kemp & Kempner 1, std 1441 ft. Sunshine State Oil & Ref. Co.'s W. P. Ferguson 1, set casing 1440 ft. Mike Sullivan Oil Co.'s S. Wilson 1, dr 1015 ft. Smith et al's G. T. Netherton 1, rigged up and sd. Swastika Oil Co.'s J. T. Richardson 1, sd 1500 ft. Scott & Gose S. M. Gose 1, rigging up. The Texas Co.'s W. Beck 6, testing 1584 ft; Beck 7, dr 610 ft; Beck 8, dr 200 ft; Beck 9, 10, 11 and 12, lcns. Texhoma Oil & Ref. Co.'s S. M. Gose 28, dr 1300 ft; Netherton 1, preparing to pump 1601 ft; Lyles 1, dr 1250 ft; T. B. Wilson 2, dr 500 ft. White Oil Corp.'s Kemp & Kempner 1, dr 1430 ft.

CLAY COUNTY—Barker & Shelby's J. N. Craig 1, sd 715 ft. Gulf Production Co.'s C. M. Worsham 1, ur 900 ft. Nebraska Oil & Gas Co.'s W. H. Myers 1, fsh 2700 ft. Lone Star Gas Co.'s Stine 16, dr 1750 ft; Miller 1, dr 1400 ft; Edrington 3-A, co 2175 ft. Riddle et al's Hawthorne 1, rigged up. Scaling Oil Corp.'s Geo. Scaling 1, sd 980 ft. Stover & Shira's J. H. Spivey 1, sd 360 ft. The Texas Co.'s Byers 45, first hole lost at 700 ft. dk skidded.

COOKE COUNTY — Powell et al's Whaley-Jones, sd 745 ft.

GRAYSON COUNTY—Peters Oil Co.'s T. Butcher 1, dr 3912 ft. Preston Anticline Oil Co.'s Munson 1, sd 3650 ft. Revere Oil Co.'s Exstein 1, fsh 2300 ft.

HARDEMAN COUNTY — Mid-West Pet. Co.'s Mulkey 1, dr 2715 ft. Nee-No-Shee Oil Co.'s Stewart 1, dr 2700 ft. Walker Oil Co.'s W. L. Lance 1, repairing boiler 1505 ft.

JACK COUNTY—Barrett et al's Mrs. E. Leatherwood 1, co 3100 ft. Copeland-Spoontz's Lindsay-Boyd 1, timbers. Mitchell Oil Co.'s Myers 1, fsh 700 ft. Mercier & Casey's Hoefle 1, dk. Ralco Oil Co.'s Loving 1, fsh 3515 ft. Roxana Pet. Corp.'s Williams 1, fsh 4615 ft. Silver Star Drilling Corp.'s Coker 1, sd 895 ft.

MONTAGUE COUNTY—Bowie Chief Oil Co.'s C. H. Boedeker 1, sd 1520 ft. Boyd Drilling Co.'s Dr. Potter 1, sd 1650 ft. S. L. Fowler et al's S. L. Fowler Ranch 1, dr 1000 ft. Petroleum Producers Co.'s J. W. Maddox 1, sd 845 ft, 20,000,000 ft gasser. Raymond Oil & Dev. Co.'s Summerour 1, sd 1800 ft. The Texas Co.'s J. E. Lemons 1, sd 760 ft, 15,000,000 ft gasser; Lemons 2, dr 376 ft.

WILBARGER COUNTY — Burton et al's Wharton 1, sd 2065 ft. D'Yarmitt & Spencer's W. T. Waggoner 1, dr 1630 ft. Modern Pet. Co.'s Waggoner 1-B, sd 1940 ft; Waggoner 1, sd 900 ft. Noble Oil & Gas Co.'s Thompson 1, dr 3140 ft. Planet Pet. Co.'s Waggoner 1, dr 2250 ft. Zacaquiesta Oil Co.'s A. B. Wharton 1, sd 1710 ft.

Peruvian Fields Producing 3,500,000 Bbls. Annually

WASHINGTON, D. C., Sept. 11.—The Peruvian Oil fields of South America are producing at the rate of 3,500,000 barrels annually at present, acocrding to available figures from the Peru government. This is highest stage of production that the fields of the country have reached.

At this time there are three companies carrying on development and exploitation work in the country among which the largest is the International Petroleum Company, subsidiary of the Imperial Oil Company of Canada which in turn is a subsidiary of the Standard Oil Company of New Jersey. The other two concerns are the Lobotis and a smaller company owned by peruvians.

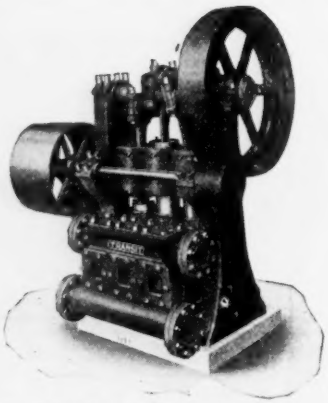
The International operates a 5,000 barrel refinery on the coast which handles a large percentage of the oil produced but some Peruvian crude reached California plants via the tanker route.

Two grades of oil are produced at present in the country, cold test and hot test oils. The higher grade crudes having a quality and yield similar to that of Pennsylvania fields. Development has been under way in the country since 1908.

Argentine Government Makes Investigation

Buenos Aires, Argentine, Sept. 6.—(by mail) The Argentine government is preparing to make a thorough investigation of the alleged mismanagement of oil properties at Comodoro Rivadavia and a report as to present conditions in this South American field is expected in the near future.

It is pointed out that production in the field during the first six months of 1921 was 949,300 barrels and notwithstanding additional facilities and the fact that private concerns doubled and trebled production the total output for the first half of 1922 was only 63,700 barrels greater than that of 1921.



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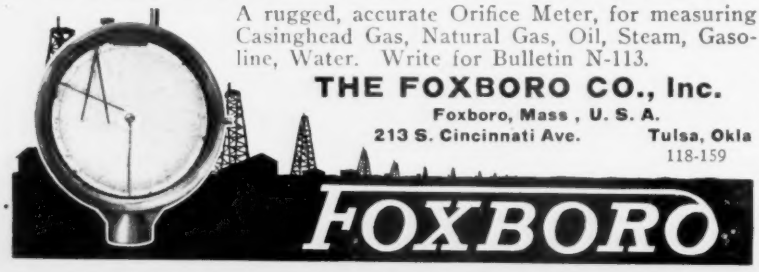

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RECOGNIZED PETROLEUM GEOLOGISTS

FOUR DAY CEMENTING PROCESS IS AVAILABLE

(Continued from Page 55)

the hydration or hardening of the various entities of cement, it then becomes merely a matter of systematic research to find another catalyst which will speed up the hydration of this all-important tri-calcium silicate. Guided by some studies made during the late war, the writer speedily fell upon the proper re-agent for the purpose and with whole hearted co-operation in the field, has reduced the discovery to practice.

The behavior of the treated cement in the test wells exceeded my expectations, but any substance which can exert such a profound influence upon the early strength of a thin grout might be assailed by the ultra-conservative as to its durability. What has in fact been done by this re-agent, is merely to bring about in a period of four days, what ordinarily would take from two to three weeks. The normal products of hydration have not been changed, but merely made to form at a more rapid rate.

Compression Strength Tests

In all tests as well as in the actual field work, Santa Cruz Oil Well Special Cement was used. The original qualitative studies were made on grouts containing 50 per cent by weight of fluid—that is—field consistency, and cast into rotary mud. To remove any doubts that might be raised regarding the durability of the treated cement, a series of compressive strength tests were made upon neat mortars made with normal (25%) consistency and field or 50% consistency, together with the usual tests for constancy of volume (boiling test).

Constancy of volume:

Pats of neat cement 24 hours in air, 5 hours in steam at 212° F.

Untreated, 25% Consistency; found no warp or crack-off of glass.

Untreated 50% Consistency; found no warp or crack-off of glass.

Treated 25% Consistency; found no warp or cracks on glass.

Treated 50% Consistency; found no warp or cracks on glass.

Which shows the treated to be even more constant in volume than the untreated. The slightest change in volume would loosen the pat from the glass. Air pats at the end of two months, were still on the glass and adhering to glass. So, that judged from all criteria of volume constancy, the treated cement is perfect.

Compressive Strengths

Cubes 2 inches, all specimens of neat cement kept in air 24 hours; then under water for balance of time.

25% Consistency

Compressive strength Lbs. sq. in.

	Untreated	Treated
1 day	1250	3500
2 days	5250	8750
7 days	7500	9000
14 days	8125	9750
28 days	9375	9875

50% Consistency

Compressive strength Lbs. sq. in.

	Untreated	Treated
3 days	381	1850
7 days	2500	3750
14 days	4250	5000
28 days	4375	5720

In addition to these standard tests, an autoclave steam test was made upon the treated and untreated cement. The cubes were kept 24 hours in air, and then steamed for 3 hours at 150 pounds pressure.

Compressive Strength after three hours Steam at 150 Lbs.

	Lbs. per Sq. In.
25% consistency, untreated	2410
25% consistency, treated	7040
50% consistency, untreated	710
50% consistency, treated	3790

The autoclave test is so unjustly severe that it is now no longer used as a required test for constancy of volume.

No Evidence of Cracking

Pats made with the re-agent were allowed to set in air 24 hours, then boiled in a very acid water taken from the C. C. M. O. Del Amo No. 1 at Redondo. The pat after five hours boiling was firm and sound, showing no evidence of cracking, shrinking, or softening.

During the great war, the writer was called upon to develop a rapid hardening concrete. The general principle employed was the same as he now uses, with the exception that at that time the chemical reactions were not as fully investigated as at present, and furthermore, the material was not to be used neat, but as a mortar or concrete. Test specimens were crushed up to a period of eighteen months. These tests showed an early strength much higher than ordinary cement and showed a gradual increase in strength, both in air and under water, up to the eighteen months' period, which was the end of the series.

The tests were made with a mortar consisting of one part Portland cement to three parts river sand. The amount of

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; f—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—side reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

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water (solution) was 12% of the weight of the cement and aggregate.

	Untreated Lbs. per Sq. in.	Treated Lbs. per Sq. in.
3 days	1212	2962
7 days	2551	3546
28 days	3646	4190
3 months	4255	4024
6 months	4362	4466
12 months	4210	5471
18 months	4420	4602

All figures being the compressive strength in Lbs. per sq. inch. Test pieces 2 x 2 inches.

On the untreated mortar a slight retrogression in strength took place at 12 months. On the treated sample this retrogression took place at an earlier period i.e. 3 months.

It is a very general rule in long time tests that at some period at or within a year a slight retrogression takes place in the compressive strength.

Tests were also made as follows:

Pats 24 hours in air (25% consistency) and then boiled in ¼ of 1% solution of hydrochloric acid and in ¼ of 1% solution of phosphoric acid. Examination showed no cracking or loss in volume.

Generally: Laboratory tests are of necessity made under ideal conditions and do not approximate field conditions. The environment in which the cement is to harden in a hole, is far from ideal. The cement first of all has to be mixed with a very large excess of water in order to impart the necessary fluidity. Inevitably it will suffer further dilution with water or mud in being placed.

"Unset" Cement

The refusal of a cement to "set up" in a well, is only too familiar to the operator. The writer has made a very extended study of such a cement which was bailed out of the hole in apparently the same condition of fluidity as when first pumped in. He has found in all cases investigated, that the cement had actually hydrated itself (that is set up), but this hydration was one of individual cement grains, which, however, did not make contact with one another; that is, the dilution of the grout was such that each cement grain was separated from the other by a film of water—a condition approximating the state of quick sand. This phenomenon is now well recognized by the physical chemist. "Unset" cement such as has just been mentioned, is in all probability a case of hydration in suspension in which the particles do not coalesce to a compact mass.

In the cementing of wells by this reagent, control samples are taken from each batch, mixed, placed in a milk bottle, and covered with water. It is noticed right at the outset of the first field experiments, that the cement settled out of the water with great rapidity, forming a very compact mass. This phenomenon was immediately investigated more fully in the laboratory, with the result that this rapid settling out was found to expel a very considerable portion of the excess of water, making the conditions for proper hardening more propitious. This was carried a little further. The cement was cast directly into a bottle of rotary mud and was seen to settle out from the mud in a compact mass, which hardened at a most gratifying rate.

This re-agent therefore acts as a flocculating agent or coagulant in addition to its accelerating action upon the hardening. This is an unforseen and very important property. This coagulating or settling action was furthermore found to reside in a number of other compounds. In the patent application this broad principle has been covered. In addition, the whole matter has been covered by claims comprising a method, a composition, and a process.

New York, Sept. 12.—Surplus left to the Associated Oil Company after allowing for interest, federal taxes, depreciation and depletion has been allowed, amounted to $2,704,449 for the six months ending June 31, 1922. This compares with $3,019 754 for the corresponding period of last year.

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How Oil Industry of U. S. Has Grown Since First Well Was Drilled

NEW YORK, N. Y., Sept. 11.—Growth of the oil industry since the first oil well was drilled in 1859, is shown by data just compiled by the American Petroleum Institute.

From 1859 to 1906, the year in which the consumption of petroleum and its products began to show a marked increase, the total production in this country amounted to 1,640,000,000 barrels.

During the last two and a half years, from January, 1920, to June, 1922, the production of oil in the United States and Mexico was about 1,600,000,000 barrels, or only 2.4 per cent less than the quantity produced here during the 47 years between 1859 and 1906.

In connection with these figures, R. L. Welch, secretary of the Institute, said today:

"The impulse behind the growth of the industry has been the development of the internal combustion engine.

"That the industry has been able to meet the demands made upon it is due to the commercial and economic freedom in which it has operated.

"However, this freedom is responsible for violent fluctuations in demand and supply, which have led those unacquainted with the industry to attribute the frequent rapidity of price movements to causes other than the fundamental uncertainties of the situation itself.

"In other words, the public is accustomed to think of the oil industry in the light of conditions prevailing in 1906; that is, in terms of large interests and bygone days.

"The great increase in the demand and the supply has created a new refining and distributing industry.

"In 1906, the oil industry existed to fill the demands for a comparatively few million barrels of kerosene and lubricating oil.

"The domestic production of crude oil in 1906 was less than 127,000,000 barrels. Gasoline was a by-product.

"The refineries of the United States in existence today could have run in 60 days all of the domestic crude produced in 1906.

"We are having to produce and dispose of four barrels of crude oil in order to get one barrel of gasoline and yet, in 1922, the production of gasoline will approximate 140,000,000 barrels, or about thirteen to fourteen million barrels more than the total production of crude in 1906.

"The jobbing and distributing branches of the industry have grown with equal rapidity, and the industry today is so much greater in magnitude, the uses of petroleum are so increased, the conditions of competition are so different, that the change from the time of the drilling of the first well in 1859 to 1906, was no greater than the change from 1906 to date.

"In the last decade and a half, hundreds of millions of dollars have poured into the oil industry. In no business in America has there been a freer opportunity nor a larger field."

A branch of the B. O. Jones and Company brokerage firm of Denver was established in Great Falls by B. O. Jones last week.

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COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Callahan County—		
McKnight et al's Mrs. L. T. James 2	*	655
Dr. Waide et al's C. B. Snyder 1	*	685
Runnels County—		
Russell Prod. Co.'s Russell 1	¶	2020

DRILLING REPORT

BORDEN COUNTY — C. W. Jones Drilling Co.'s F. M. Long 1, sd for cas 2010 ft.

BREWSTER COUNTY—Brewster Oil Co.'s W. H. Kokernot 1, ur cas 1675 ft. Marathon Oil Co.'s Nigger Creek 1, sd 2360 ft; Dugout Creek 1, sd 2535 ft. Portland Oil Co.'s State 1, sd 1990 ft. Nine Points Oil Co.'s Perato & Finnell 1, fsh cas 1375 ft. Arco Development Co.'s H. L. Kokernot 1, lowering cas with show of oil and gas 3235 ft.

COKE COUNTY—The Mexia Equitable Oil Co.'s W. J. H. Hodges 1, dr 940 ft.

CONCHO COUNTY—Texas Meers Oil Co.'s Schultz 1, sd 1410 ft.

CRANE COUNTY—B. M. Hatfield Oil Co.'s University 1, sd 315 ft. Texas-Mexia Drilling Synd.'s W. W. Waddell 1, rigging up.

CROCKETT COUNTY — Hull-Texas Oil Assn.'s Pierce 1, sd 410 ft.

CULBERSON COUNTY — Consolidated Sulphur Co.'s Johnson 1, sd 115 ft. G. W. Gossert's Sayles 1, sd 460 ft. T. M. Owens' Jones 2, sd 2845 ft. J. D. Wesner et al's Sayles 1, sd 2285 ft.

DAWSON COUNTY — Lamesa Oil Co.'s John Burns 1, sd 2095 ft.

ECTOR COUNTY—Farmers Oil Co.'s Andy Newman 1, dr 560 ft.

EL PASO COUNTY — Burns & Knight's Fee 1, sd 1490 ft; Fee 2, timbers.

FISHER COUNTY—Mineola Oil Co.'s Lanius 1, sd to repair rig, td 3205 ft.

GARZA COUNTY — Woodward Oil Co.'s J. M. Boren 1, sd 1965 ft.

GLASSCOCK COUNTY — Cushing Ranch Drilling Assn.'s W. F. Cushing 1, dr 3915 ft; Sparkman 1, sd 750 ft. General Oil Co.'s L. S. McDowell 1, dr 3660 ft. Associated Producing & Ref. Co.'s C. I. Brunson 1, sd 2015 ft.

HUDSPETH COUNTY—Boole Oil Assn.'s Gardner & Mosley 1, sd 1075 ft. Cactus Oil Co.'s Jones 1, sd 615 ft. Hueco Basin Oil Co.'s University 1, sd 2565 ft.

JEFF DAVIS COUNTY—Magnet Oil Co.'s Tatum 1, sd 975 ft.

JONES COUNTY—Magnolia Pet. Co.'s S. Jordan 1, dr 2415 ft. Merkle Oil Co.'s John Sears 1, rig. C. & H. Oil Co.'s Cullom 1, sd 2850 ft. Anson Oil & Dev. Co.'s C. B. Brown 1, sd 1860 ft.

LOVING COUNTY—Pinal Dome Oil Corp.'s John Z. Means 1, plugged back from 5215 ft to 2500 ft and sd. Ramsey Oil Co.'s Russell 1, sd 4485 ft; Russell 2, sd 605 ft.

MARTIN COUNTY—Cox Realization Co.'s George Walcott 1, sd 2070 ft.

PECOS COUNTY—Bower et al's University 2, sd 1705 ft. A. S. Luse's G. W. Allison 1, sd 205 ft; Hock et al 1, sd 305 ft. Oregon-Texas Drilling Assn.'s Turney 1, sd 1905 ft. Pecos Valley Oil Co.'s Fuller 1, rig. Polk Prospecting Co.'s Rooney 1, sd 1230 ft. W. S. Try's Johnson 1, hole full water and trying to shut off at 2685 ft. Greer et al's Burnett 1, sd 430 ft.

REAGAN COUNTY—Texon Land & Oil Co.'s University 1, sd 2035 ft.

REEVES COUNTY—Bell Reeves Oil Co.'s Findley et al 1, sd 1540 ft. Dixieland Oil Synd.'s Oates 1, dr 2810 ft. El Paso Saragosa Oil Co.'s George Wirt 1, sd 540 ft. Los Pecos Oil Synd.'s Oates 2, sd 730 ft. Parker-Hancock Synd.'s Johnson 1, sd 1930 ft. Pecos-Angeles Co.'s Pecos Valley 1, sd 1415 ft. Toyah-Bell Oil Co.'s T. P. Land Co. 1, sd 735 ft. Zone Oil Co.'s Kate Tappl, sd 735 ft. Willoughby Pet. Co.'s W. D. Cowan 1, dr 610 ft; W. D. Casey 1, sd 180 ft. Pico Pet. Co.'s Johnson 1, sd 1930 ft. Hawkeye Pecos Oil Synd.'s T. P. Land Co. 1, sd 825 ft. Sunshine Oil Corp.'s Van Horn Bank 1, sd 2555 ft. Texas Drilling & Dev. Co.'s Pecos Valley Synd. 1, sd 1105 ft. Chicago Drilling Co.'s H. G. Hersheusen 1, sd 15 ft.

RUNNELS COUNTY—Runnels Prod. Co.'s Russell 2, rig. Safety First Oil Co.'s Allen 1, sd for cas 2845 ft. Winters Oil & Gas Co.'s Lee Sauls 1, dr 3090 ft.

SCURRY COUNTY — Hermleigh Oil Co.'s J. W. Burris 1, sd 1380 ft. Stanton Oil Co.'s J. V. Riley 1, sd 2505 ft. Geo. W. McLung's J. J. Billingsley 1, dr 925 ft.

SCHLEICHER COUNTY — Paragon Oil Co.'s B. M. Boyd 1, timbers.

STERLING COUNTY — Co-operative Lease & Dev. Co.'s Douthit 1, sd 1675 ft. Chicago Oil & Gas Co.'s B. C. Durham 1, sd 415 ft. Concho Drilling Assn's McIntyre 1, sd 505 ft. Sterling Pet. Co.'s Tom Brannand 1, dr 1945 ft.

TAYLOR COUNTY — Abilene-Texas Petroleum Co.'s J. C. High 1, sd 2025 ft. Andy Urbin et al's Parker 1, showing oil and gas after shot 120 qts from 3380 to 3445 ft, co. Sanger Oil & Ref. Co.'s Hale 1, dr up bailer 1855 ft.

TOM GREEN COUNTY—Ranger Investment & Development Co.'s Harris 1, fsh for cas 2855 ft.

WARD COUNTY—Arthur Pitts Oil Co.'s Soda Lake 1, sd 2205 ft; River 1, sd 4675 ft; Valley 1, sd 1685 ft. Cook & O'Brien's G. W. O'Brien et al 1, sd 1175 ft. Trans-Pecos Oil Co.'s Longnecker 1, sd 1755 ft.

MAPS

Oil fields in Texas, Louisiana, Kansas, Oklahoma and Mexico. Also U. S. Geological quadrangle maps of Texas, New Mexico, Louisiana and Colorado. Texas county maps covering all of the state.

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San Antonio District Wildcats

ATASCOSA COUNTY—DeLange Eiser Co.'s Tom 1, setting casing 2400 ft; 2, dr 420 ft.

ARANSAS COUNTY — Texas Coast Oil Synd.'s Harris 1, dr below 2600 ft.

BEXAR COUNTY — Transcontinental Oil Co.'s Strelczyk 1, setting 6⅝-inch casing below 1200 ft. Ray Oil Co.'s Skrycki 1, sd. Mason et al's 1, dr. Gafney et al's Sodred 1, dr. San Antonio Prod. Oil Co.'s Poesek 2, lcn.

DUVAL COUNTY—Federal Oil Co.'s Smith-Cockeral 1, setting casing. National Oil Co.'s Scharlert 4, r to set 6-inch at 2810 ft. Mar-Tex Oil Co.'s Ridder 2, 3 and 4, sd. Gray Ridge Oil Co.'s Gray 1, dr 3890 ft. Givens Oil Co.'s Hanajosa 2, lcn. Humble Oil & Ref. Co.'s Singer 3, bailing 3065 ft. Abercombie et al's Benavides 1, sd. Flornoy & Givens' Canales 1, dr below 1900 ft.

JIM HOGG COUNTY—Forest-Miracle Oil Co.'s Holbein 1, fsh 1400 ft. Las Animas Oil Co.'s Holbein 1, dr 2400 ft. Woods et al's Holbein 1, dr 810 ft. Miami-Balderas Oil Co.'s 1, dr below 3200 ft. Givens Oil Co.'s 1, dr below 2000 ft. Revere Oil Co.'s Davenport 1, dr below 2800 ft. Weber Oil Co.'s Los Anamis 2, dr 540 ft. Elm Oil & Gas Interests's Holbein 1, dr. Ohio Fuel & Oil Co.'s 1, lcn. E. O. & W. Oil Co.'s Holbein 1, dr.

KLEBERG COUNTY — Francis Oil Co.'s Flato 1, dk. Caprock Oil Assn's Nolkemper 1, dr 4250 ft.

McMULLEN COUNTY—Charles A. Snapp Co.'s Artex Shiner 2, bailing. Grubstake Investment Assn's Stitz 1, dr out old pipe; Jacob 2, setting packer to test for gas at 1393 ft; Callahan 2, sd. San Balt Pet. Co.'s Martin 1, set 10-inch casing 1550 ft, resumed dr. Pioneer Consolidated Pet. Co.'s Lowe 2, setting casing. Troy-Ballard Oil & Gas Co.'s Byrne 1, dr below 300 ft. Hopkins-East Jacob 3, dr. Circle Y. Drilling Co.'s Martin 1, sd.

VAL VERDE COUNTY—R. Cook et al's 1, dr. Del Rio Oil & Gas Co.'s Eagle Pass Hill 1, dr. Havalien Oil Co.'s Weathersbee 1, dr; 2, lcn. Reclamation Oil Prod. Synd.'s Moore-Whitehead 1, setting 6-inch. Huber Oil Co.'s Harrison 1, dr 1050 ft. Humble Oil & Ref. Co.'s McDonald 1, lcn. Pure Oil Co.'s Stevenson-Murrah 1, lcn. Fensland Oil Co.'s Ab Rose 1, dr 1140 ft. C. Miller et al's 1, dr 250 ft. Wm. Devine et al's Whitehead 1, lcn. Heaton & Ady's Sellers 1, lcn.

Oklahoma Wildcats

COMPLETION

Company, Well, Location	Initial Production bbls.	Depth
Greer County—		
Knight et al Parks 1, SEc 14-7n-21w	*	1740

DRILLING REPORT

(Wells shut down, rigs and locations are not reported as such a second time and will not be mentioned again until activtiy is resumed.)

CANADIAN COUNTY—Chase Oil & Gas Co.'s Dawson 1, SEc SW 34-13-9w, dr 650 ft.

GRADY COUNTY — McBee et al Thomas 1, SWc SE SW NE 19-5-7w rigging up.

GRANT COUNTY—Waldo & Buckley

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Stewart 1, C SW SW SE 35-28-7w, dr 1820 ft. National Refining Co. Rogers 1, NEc NE NW 15-27-4w, co 1600 ft. Western States Oil Co. Swaggart 1, SWc SE SE 15-27-3w, old well, co 3500 ft; Lane 2, NEc SE NE NE 27-27-3w, dr 2250 ft. Comar Oil Co. Smalley 1, SEc NW SE 13-25-4w, dr 700 ft.

HUGHES COUNTY — Frank Tack Stewart 1, SEc SW 1-9-10, dr 1975 ft.

LINCOLN COUNTY—Plateau Oil Co. Keller 1, SWc 28-17-3, fsh 1500 ft. Magnolia Pet. Co. Payne 1, C NE NE 6-17-4, fsh 1225 ft.

LOGAN COUNTY—Mulhall Oil Co. Wyant 1, NWc NE 9-18-2w, dr 2175 ft.

LOVE COUNTY — Reid-Davenport Gray 1, NEc 9-7s-1w, dr 200 ft. Crosby et al Robertson 1, C SW SE 16-8s-2e, dr 2100 ft.

McCLAIN COUNTY — Mariam et al Wantland 1, C NE 1-5n-2w, dr 1920 ft.

MURRAY COUNTY—Corn Huskers Oil Co. Wolfe 1, NWc SW 6-1n-2e, dr 1700 ft.

NOBLE COUNTY—Osseenbeck et al Sawyer 1, NEc NW 12-21-3, dr 550 ft.

OKLAHOMA COUNTY — Engineers Pet. Co. Williams 1, SEc SE 13-14-2, dr 3400 ft.

PONTOTOC COUNTY — Lawrence Bros. Jones 1, NWc 15-4n-4e, dr 2200 ft. Canadian Pet. Co. Blathrop 1, SEc 16-4-6, fsh 500 ft.

SEMINOLE COUNTY—Cosden Oil & Gas Co. Williams 1, SEc NW 15-10-8, ur, td 1770 ft.

WASHITA COUNTY—Empire Gas & Fuel Co. Hamilton 1, SWc SE 25-12-14, dr 1650 ft.

Arkansas Wildcats

COMPLETIONS

Company, well, location	Initial Production bbls.	Depth
Columbia County—		
Oklahoma Pet. Corp.'s Walker 1, 17-19-21	*	1408

DRILLING REPORT

BRADLEY COUNTY—Southern O. & L. Co.'s Blankenship 1, 20-12-9, set 8-inch 1365 ft; Bradley 1, 25-13-10, set 8-inch and abn 2002 ft.

CALHOUN COUNTY—Calhoun O. & D. Co.'s Hernsberger 1, 16-11-13, sd 2350 ft. Hermann Oil Co.'s Freeman-Smith 2, 27-14-15, dry 2406, will deepen; Freeman-Smith 3, 31-14-15, testing 12½-inch 503 ft.

CLARK COUNTY—Arkansas Synd.'s Barringer 1, 26-10-20, sd 2750 ft. Casey et al's Sloan 1, 18-8-19, rig. United Pet. Co.'s Langford 1, 28-5-23, sd 1590 ft.

COLUMBIA COUNTY—American F. O. Co.'s Nix 1, 21-16-22, sd 3100 ft. Brown et al's Robinson 1, 23-18-23, to test 903 ft. Cox et al's Davis 1, 14-18-21, sd 2330 ft. Dexter et al's Davis 1, 12-18-21, sd 2675 ft. Dowdy et al's Fullenwilder-Rhea 1, 12-17-22, dk. Hercules Oil Co.'s Wise 1, 29-18-21, sd 2565 ft. Haskell et al's Brown 1, 10-17-20, sd 3000 ft. Hosey & McDonald's Haire 1, 30-19-18, dr 125 ft. Manhattan Oil Synd.'s Davis 1, 14-18-21, dr 2300 ft. Ohio Oil Co.'s Smith 1, 5-20-19, dr 3315 ft. Russell et al's Flint 1, 3-20-20, dk; Rushton 1, 7-19-19, coring 1710 ft. Sharp & Strough's Brown 1, 28-18-23, to set 8-inch 1050 ft. T. S. D. Co.'s Magale 1, 11-17-21, sd 3020 ft.

DALLAS COUNTY—Ohio Oil Co.'s Taylor 1, 27-9-17, testing 8-inch 1315 ft.

DREW COUNTY—Dunn Marr Pet. Co.'s Hardy 1, 7-13-7, sd 1887 ft. Garrison et al's Smith 1, 26-13-5, setting 6-inch 3080 ft. Hofland et al's Doern 1, 9-12-14, sd 1000 ft. Stainke et al's Fee 1, 23-13-7, sd 2050 ft.

GRANT COUNTY—Grant County Oil Co.'s Stupka 1, 15-5-12, sd 1210 ft. Jeter & McGee's Cargile 1, 26-5-12, sd 700 ft. Winters et al's Lamb 2, 25-6-15, sd 1876 ft.

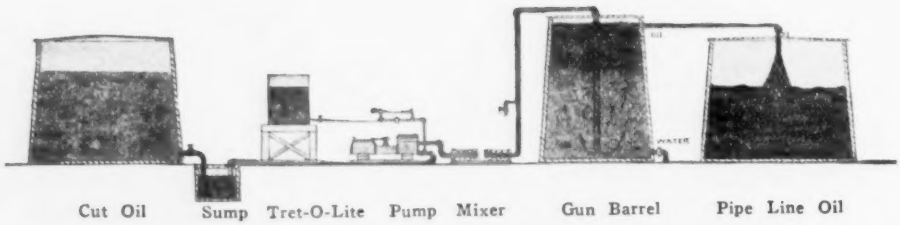
HEMPSTEAD COUNTY—Allen Oil Co.'s Henry 1, 30-12-23, fsh 2880 ft. Georgia Oil Co.'s Duckett 1, 28-10-24, sd 965 ft. Georgia-Arkansas Synd.'s Mitchell 1, 16-11-24, sd 1850 ft. Sechrist et al's Duckett 1, 23-23-33, sd 1785 ft. Tycap Oil Co.'s Mason 1, 7-11-25, showing oil. 2356 ft, will set cas and test.

LA FAYETTE COUNTY—La Fayette O. & G. Co.'s Creek 1, 10-15-24, dk. Ken-Saw Pet. Co.'s Fee 1, 31-19-24, coring 2765 ft.

LITTLE RIVER COUNTY—Sullivan Oil Co.'s Ludlow 2, 4-11-20, setting 6⅝-inch 620 ft.

MILLER COUNTY—Dodwell et al's Miller 1, 29-18-27, dr 785 ft. Farmers O. & G. Co.'s Ramsey 1, 24-17-23, dk. Magnolia Pet. Co.'s Westmoreland 1, 9-19-27, dr 1350 ft. Miller Land Co.'s Miller 1, 18-18-27, dk. Primero Oil Co.'s Bedgood 1, 2-16-18, sd 2200 ft.

NEVADA COUNTY—Goetz et al's Munn 1, 4-14-22, sd 400 ft. Kan-Ark Oil Co.'s Brimberry 1, 21-13-21, r 2185 ft. Murphy & Falke's Williams 1, 3-15-20, dk. Nelson et al's Lester & Haltom 1, 4-15-20, dr 1600 ft. Tri-County Oil Co.'s



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Drake 1, 3-15-20, testing 2287 ft. Watkins et al's Womack 1, 11-14-21, to set 8-inch 1080 ft to test sand at 1191 ft. White et al's Phillips 1, 30-14-20, rig.

OUACHITA COUNTY — Lumbermans Oil Co.'s Crutcher 1, 27-15-18, sd 2300 ft. Southern Oil Co.'s Patterson 1, 22-12-9, fsh 2895 ft. Springer Oil Synd.'s Hecker 1, 2-14-17, dr 2425 ft. Universal Pet. Co.'s Benton 1, 24-12-19, dr 3415 ft. Walker et al's Hickman 1, 16-14-17, sd 1915 ft. White et al's O'Donnell 1, 31-13-16, lcn.

Louisiana Wildcats

BIENVILLE PARISH—Davis Synd.'s Theus 1, 5-17-5, sd 2785 ft. Langston et al's Davis 1, 23-17-5, sd 1485 ft. Planters O. & M. Co.'s Enloe 1, 28-18-4, sd 2945 ft. Smitherman et al's Pentecost 1, 20-18-5, dr 1750 ft; White 2, 29-18-5, dk timbers.

CADDO PARISH — Louisiana-Texas Community Oil Co.'s Hill 1, 33-23-16, dr 2575 ft.

BOSSIER PARISH — Atlantic Prod. Co.'s Johnson 1, 21-22-13, fsh 3660 ft. Chandler et al's Gayle 1, 33-20-13, lcn. Clark et al's Connell 1, 35-18-12, lcn. Collins et al's Gray 1, 28-19-13, dr 50 ft. Elliott et al's McLaughlin 1, 10-18-11, sd 500 ft. Flournoy et al's Kirby 1, 36-18-13, dr 2715 ft. Hoencke et al's Freeman 1, 15-18-12, dr 2850 ft. Invincible Oil Co.'s DeMoss 1, 20-22-12, dr 2680 ft. Lakeside O. & G. Co.'s Fee 1, 17-16-20, set 10-inch 305 ft. Olmstead et al's Scanlan 1, 10-20-13, dk. Perkins et al's Gayle 1, 33-20-13, dk. Skannal et al's Roscoe 1, 14-17-12, setting 8-inch 825 ft. Standard Oil Co.'s Rawls 1, 15-22-11, rig.

CLAIBORNE PARISH—Adams et al's O'Bannon 1, 25-22-5, rig. Es-To Oil Co.'s Tuggles 1, 31-21-6, sd 2135 ft. Fawn Creek Oil Co.'s Kinder 1, 32-22-7, sd 1493 ft. Fullenwilder et al's Fullenwilder 1, 8-23-6, sd 800 ft. Gulf Ref. Co.'s Meadow's 1, 20-21-7, dr 1830 ft. Harrell et al's Brinkley 1, 15-23-4, sd 1650 ft. Haynesville Star Oil Co.'s Crump 1, 9-23-7, sd 3030 ft. Mitchell et al's Cooper 1, 19-23-4, sd 600 ft. Meyer et al's Boatner 1, 20-19-5, sd 1130 ft. O'Neill et al's Prestridge 1, 17-22-7, sd 4100 ft. Opal-May Oil Co.'s Kelly 1, 3-23-4, sd 2161 ft. Steel et al's Wise 1, 15-23-6, sd 2810 ft. Steuben Gas & Oil Corp.'s Taylor 1, 16-22-6, dk.

EVANGELINE PARISH—Duke et al's LeDanois 2, 34-3-1, testing cas 1230 ft.

DE SOTO PARISH—Eads et al's Nolan 1, 15-10-13, dr 3075 ft. Elam Synd.'s Giauque 1, 9-11-11, dk. Fortuna Oil Co.'s Folly 8, 18-12-10, sd 3460 ft. Lee et al's Joiner 1, 28-12-12, dr 2915 ft. Pilgrim Oil Co.'s Ramsey 3, 33-13-16, dr 3975 ft. Simms Oil Co.'s Pelican 1, 8-11-11, dr 3880 ft. Snell et al's Connell 1, 8-12-14, testing 2987 ft. Tarver Drlg. Co.'s Rock 1, 32-12-11, dk.

FRANKLIN PARISH—Burrell et al's Gilbraith 1, 22-13-8, dk.

LINCOLN PARISH — Roxana Pet. Co.'s Thomas 2, 24-18-4, dr 1910 ft. Greer & Gault's Simmons 1, 25-18-1w, dk.

MOREHOUSE PARISH—Windsor O. & G. Co.'s Pipes 1, 18-19-6, sd 2230 ft.

NATCHITOCHES PARISH—Parks et al's Morse 1, 23-5-6, dk; Crowell-Spencer 1, 29-5-6, dk.

RAPIDES PARISH—Bell et al's Barnett 1, 15-5-1w, sd 1342 ft.

SABINE PARISH—Brown et al's Bowman-Hicks 1, 7-7-12, dr 1900 ft; Bowman-Hicks 2, 15-7-12, sd 410 ft; Bowman-Hicks 3, set 10-inch 40 ft. Campbell Oil Co.'s Long-Bell 1, 17-8-13, dk. Gladys-Belle Oil Co.'s Belmont-Raines 1, 33-9-11, dr 2500 ft. Middlesex Oil Co.'s Smith 1, 17-7-10, dr 155 ft. Pathfinder Oil Synd.'s Long-Bell 1, 8-8-13, set 10-inch 550 ft. Zwolle Oil Co.'s Bowman-Hicks 2, 15-7-12, set 8-inch 380 ft.

UNION PARISH—Gardner et al's Brown 1, 6-23-3W, dry 2132 ft, will deepen. Price et al's Rogers 1, 23-23-2, dr 2095 ft. Texas Co.'s Grayland 2, 20-23-2, fsh 2860 ft; Taylor 1, 3-22-2, set 10-inch 2050 ft. Transcontinental Oil Co.'s Carroll 1, 12-20-2, dr 2950 ft.

WEBSTER PARISH—Arkansas Nat'l Gas Co.'s Louisiana 1, 24-23-10, fsh 3053 ft. Belchic & Laskey's Pinewoods 1, 35-23-10, rig. Burkhalter et al's Burkhalter 1, 29-19-8, sd 2160 ft. Empire Drilling Co.'s Spencer 1, 5-21-9, sd 3240 ft. Humble O. & R. Co.'s Hicks 1, 10-22-9, sw 2794 ft, will deepen. Kinney Bros.' Hudson 2, 17-19-10, lcn. LeGuerre Synd.'s Miller 1, 33-19-10, set 6-inch 1145 ft. Louisiana Oil Ref. Corp.'s Gleason 3, 18-22-9, fsh 2885 ft. Lucky Four Oil Co.'s Baldwin 1, 28-18-10, dr 850 ft; Willis 1, 4-17-10, dr 1050 ft. Midway Oil Co.'s Heflin 1, 24-17-9, lcn. Ohio Oil Co.'s Sexton 1, 31-23-9, dr 1515 ft. Raymond et al's Houston 1, 33-23-10, dr 1415 ft. Rosemont Synd.'s Gruner 1, 21-20-8, sd 1675 ft. Seven-Eleven Oil Co.'s Adkins 1, 25-21-11, sd 840 ft. Triangle Drlg. Co.'s Allen 1, 30-22-10, dk. Wadley's Pearce 1, 14-17-9, testing 8-inch 1824 ft. Woodley Pet. Co.'s Campbell 1, 2-22-10, shut in, 2670 ft.

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FRANKLIN, PENN'A.

OIL AND GAS RESOURCES OF OSAGE RESERVATIONS

(Continued from Page 16)

and Robinson[4] called a limestone in T. 28 N., R. 12 E., the Stanton (?) limestone, basing their correlation more on evidence tending to connect their limestone with the Stanton of the Kansas section than on evidence tending to prove the correlation of their limestone with that mapped by Clark. The mapping of the present area has definitely proved that the Stanton (?) limestone of Goldman is approximately 190 feet higher in the stratigraphic section than the Stanton (?) of Clark. The evidence presented by Goldman and Robinson tending to correlate their Stanton (?) limestone with the Stanton limestone of Kansas, although not conclusive, is still fairly convincing.

Fossils connected from these two limestones were referred to G. H. Girty, who reports as follows:

"The faunas in a general way would tend to locate both limestones above the Kansas City formation—that is, in the Lansing formation—and would tend to correlate the higher limestone (the Stanton (?) limestone of Goldman) rather than the lower limestone (the Stanton (?) limestone of Clark) with the Stanton limestone of the Kansas section."

With this evidence at hand it is inadvisable to continue the use of the name Stanton (?) limestone for the limestone mapped in T. 26 N., Rs. 11 and 12 E.

The Panther Creek limestone is thicker and is of more importance as a key bed in this area than to the south and to the west. In some sections it attains a maximum thickness of 14 feet. Usually the lower part is a rather siliceous impure limestone that weathers to an orange color. The upper part is a purer and lighter-colored limestone, in places almost white. The entire limestone contains an abundance of crinoid-stem segments and some other fossils. At the top occurs a very fossiliferous bed, partly argillaceous. The plates of crinoid cups and arms are especially abundant in this bed which also contains many Foraminifera, Ostracoda and Bryozoa and smaller numbers of some other forms.

The several beds of the Torpedo sandstone and the Panther Creek limestone were the most useful key beds in mapping the southern township.

Beds between the Panther Creek limestone and the Revard sandstone—Massive sandstones and thick shales compose the rocks for the first 150 to 280 feet above the Panther Creek limestone. This zone is rather constant in thickness in the area mapped. It contains some sandstones and many thin sandy limestone beds, which individually are of very small extent. They usually range from one to three feet in thickness, and many of them contain numerous brachiopods. Usually one or two of these limy lenses are present in a single section, and in a few sections there are more. Few of these limestone beds are reliable for use in mapping. One of them, however, which is decidedly less sandy and contains more gastropods than the other beds in this zone, proved to be a reliable horizon marker over a part of the area. This bed is well exposed on the south escarpment north of Butler Creek in the eastern part of T. 27 N., R. 12 E. The limestone in T. 28 N., R. 12 E. described by Goldman and Robinson as the Stanton (?) limestone, occurs in this zone. Its relation to the Stanton limestone of the Kansas section is explained in connection with the Panther Creek limestone.

The Torpedo (?) sandstone of the same authors, which occurs just below their Stanton (?) limestone, thins and locally disappears south of the area they describe. It is, of course, much higher in stratigraphic section than any of the sandstones exposed at Torpedo, the type locality of the Torpedo sandstone.

Revard sandstone.—The Revard sandstone[5] in T. 26. N., R. 10 E., is a massive sandstone 30 to 40 feet thick. In its northeastward extension into T. 27 N., R. 11 E., it thickens and in places contains much shale.

In T. 27 N., R. 12 E., the Revard sandstone is about 70 feet thick. It becomes differentiated into three distinct medium-heavy to massive bedded sandstone zones, separated by shales containing thin sandstones. The top of the Revard, which is about 350 feet above the Panther Creek limestone, for the purposes of mapping was considered to be the top of a massive bed which over most of this township is the actual top of the formation. However, in a few places a more loosely cemented sandstone is found above the main bed. This local sandstone showed very indistinct bedding planes, weathered into large rough knobs, and could as a rule be readily distinguished from the main bed that was considered to be the top. The top of the middle sandstone zone lies 42 feet below the top of the Revard. This zone is usually easier to follow in the field than the upper bed. Of the three it is usually the thickest and most massive. The lower sandstone zone, however, is the best one in the Revard to use in mapping. In fact, it proved to be the best key bed in this township. The top, which is usually ripple-marked, is about 63 feet below the top of the Revard and nearly everywhere makes a prominent bench. Its upper part is composed of massive platy sandstone beds. Just above this ripple-marked bed and separated from it by a foot or so of shale is a very thin sandstone band which is crowded with fossils. This band is distinguished from many other fossil zones by containing Pleurophorus (probably P. subcostatus) in great abundance. Unfortunately this fossiliferous bed is not everywhere present. The top beds of this zone are massive but remarkably smooth bedded. The lower beds of the Revard sandstone are typically exposed in the northeastern part of T. 27 N., R. 12 E., where they usually form the rims of the steep escarpments.

In some parts of T. 27 N., R. 12 E., either or both of the shales that separate the three sandstone zones are partly (in a few exposures almost entirely) replaced by heavy-bedded sandstone. Under these

[4] Goldman, M. I., and Robinson, H. M., U. S. Geol. Survey Bull. 686—Y, p. 367, 1920.

[5] Clark, F. R., U. S. Geol. Survey Bull. 686—I, p. 94, 1918.

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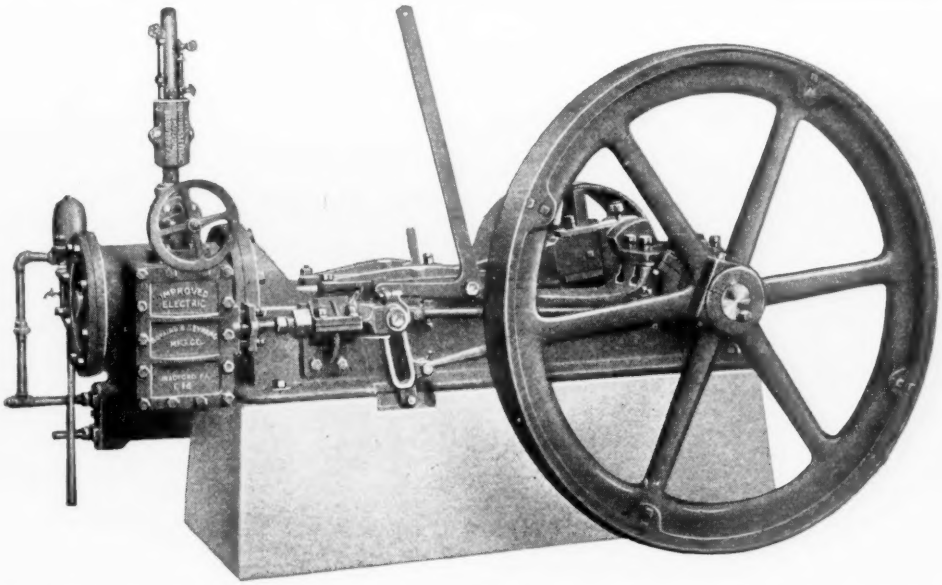

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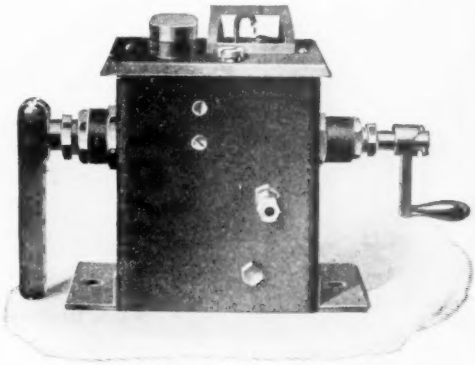

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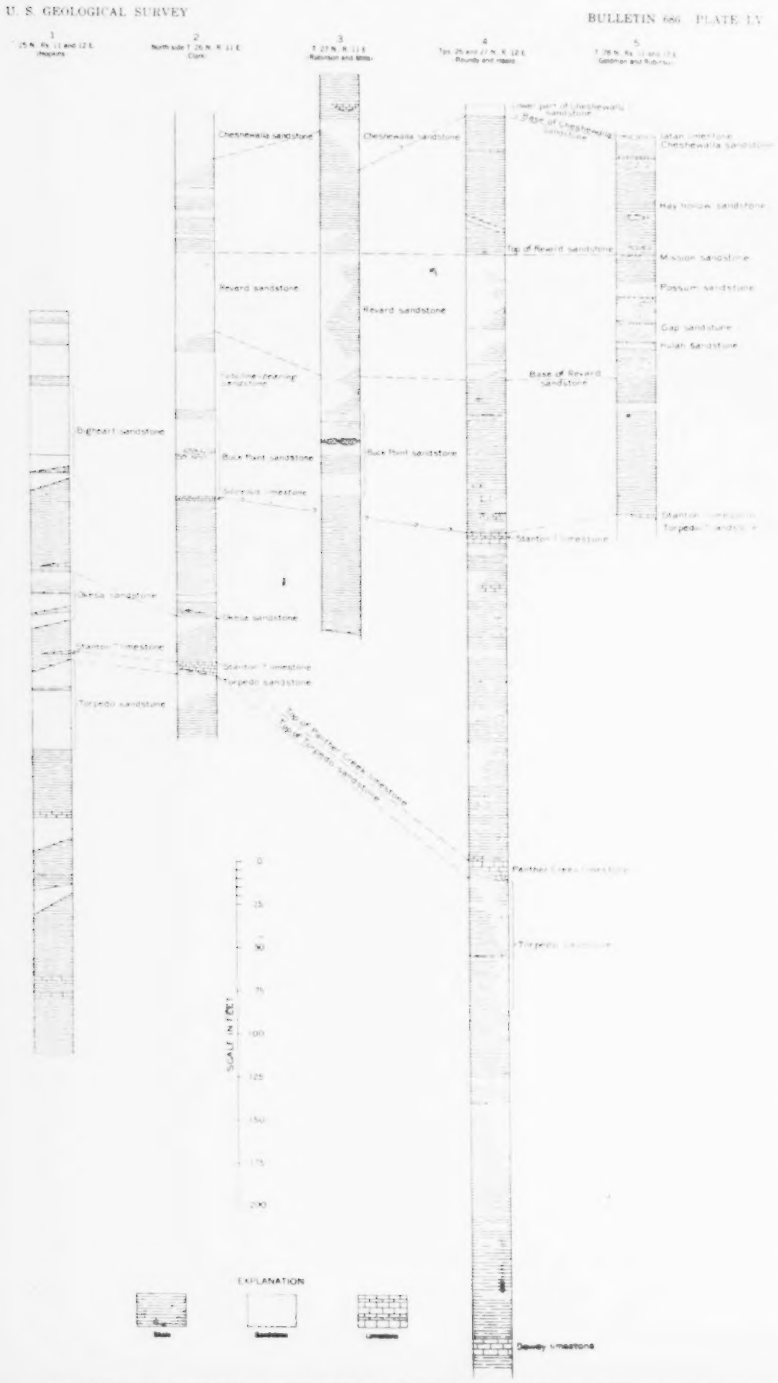
conditions it was found difficult, though not impossible, to distinguish and map all three zones.

In T. 28 N., R. 12 E., the Revard sandstone breaks up into more sandstone zones separated by shales, so that, for purposes of oil geology, it is better considered as several separate sandstones. In the work on that township parts of the Revard sandstone were mapped under the names Mission, Possum, Gap and Hulah. The Mission sandstone is equivalent to the top of the Revard and the Hulah sandstone is the same as the sandstone 42 feet below the top of the Revard in the township to the south.



GRAPHIC SECTIONS OF THE ROCKS EXPOSED IN TPS. 26 AND 27 N., R. 12 E., OSAGE COUNTY, OKLA., COMPARED WITH THOSE EXPOSED IN THE ADJACENT TOWNSHIPS

Cheshewalla (?) sandstone and underlying beds.—In the northwestern part of T. 27 N., R. 12 E., a high point and ridge are capped by a massive sandstone which is probably the lower part of the Cheshewalla sandstone.[6] It is almost indistinguishable in appearance from parts of the Revard sandstone. Between the base of the Cheshewalla (?) sandstone and the top of the Revard sandstone are thick beds of shale with thin, platy sandstones, none of which are prominent.

Rocks Not Exposed

At least 703 wells have been drilled in the Osage County portion of these two townships, but the writers have been able to obtain records of less than half of them. Of the records obtained a few show only casing data and total depth, and some show only the producing portion of the Bartlesville sand. About half of them indicate the position of the "Oswego lime." Others are more or less complete. The character of the rocks is indicated in Plate LVI, which shows graphically the driller's interpretation of the rocks penetrated in this area. These records are so alined that the top of the "Oswego lime," which is used at a datum, is a horizontal plane. Logs 1 to 14 represent wells along a north-south line through the portion of the area where the variation in interval between the top of the "Oswego lime" and the top of the Bartlesville is small. Logs 15 to 18 indicate one of the lines of rapid increase in this interval. Logs 2 and 4 are records of the deepest wells drilled in these townships. (See fig. 52.)

"Oswego lime."—"Oswego lime" is the drillers' term for the probable equivalent of the Fort Scott limestone of the Kansas section. This limestone is probably the most carefully recorded and most widely recognized underground horizon marker in eastern Osage County. In the townships here considered it is generally recorded as being 50 to 100 feet thick, though one log gives a thickness of only 40 feet and five logs indicate a thickness of more than 100 feet. Though usually recorded as a solid limestone, a few logs record one or two shale breaks in it. The interval between the top of the Panther Creek limestone and the "Oswego lime" is 1170 feet in section 31, T. 26 N., R. 12 E. To the north and to the east this interval decreases by 15 to 20 feet to the mile, being about 1050 feet in section 5 and 1000 feet in section 3. In section 17, T. 27 N., R 12 E., it is about 950 feet. In some of the wells in these townships a little gas has been found in the "Oswego lime," and elsewhere in Osage County it contains notable amounts of both oil and gas.

Beds above the "Oswego lime."—The beds between the Dewey limestone and the "Oswego lime" consist of an upper shale series with thin limestones and sandstones, a massive limestone known as the Big lime, and a lower shale containing a sandstone known as the Peru sand. The logs vary so greatly in their interpretation of the upper shale series that only a few general deductions are possible. The limestones and sandstones together comprise only about one-third of the series, the remainder being gray,

[6] Winchester, D. E., and Heald, K. C., U. S. Geol. Survey Bull. 686—G, p. 61, 1918.

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blue, brown and black shales. Three of the thin sandstones locally show a little gas, and two have furnished showings of oil. One of the sandstones yielded large quantities of oil in the Wiser Hill pool.

The Big lime is a white to gray limestone 60 to 100 feet thick. Only a few logs indicate one or two shale "breaks" in it. The top of this limestone is about 200 feet above the top of the "Oswego lime." As recorded in the logs this interval ranges from 150 to 250 feet, but no actual convergence appears to be indicated. The Peru sand with shale occupies the interval between the Big lime and the "Oswego." This sand, recorded in less than half of the logs, ranges from 10 to 100 feet in thickness. Considerable oil has been produced from it, especially in the southern and eastern parts of T. 26 N., R. 12 E.

Beds between the "Oswego lime" and the Bartlesville sand.—A sandstone lens, called by the drillers the Squirrel sand, attains a maximum thickness of 120 feet in this area. Its top lies from 72 to 140 feet below the top of the "Oswego lime." This sand is not recorded in as many logs as the Peru sand. It is of very little importance as an oil producer.

The rocks between the Bartlesville sand and the Squirrel sand, or between the Bartlesville sand and the "Oswego lime" where the Squirrel sand is absent, are shales with a few thin limestones. Occasionally a thin sand is recorded.

Bartlesville sand.—A sand that occurs between 1200 and 1300 feet below the surface at Bartlesville, Oklahoma, is called the Bartlesville sand by the drillers. It is the most productive sand in this region and one of the principal oil and gas yielding sands of Oklahoma. Its top in this area lies from 330 to 460 feet below the top of the "Oswego lime." Although part of this apparent variation may be due to the drillers' interpretation of what is the top of the Bartlesville sand, most of it is probably due to convergence in the intermediate shale series. The interval is least in an area about two miles long from north to south and less than half a mile wide, about in the middle of the mapped part of T. 26 N., R. 12 E. From this area the increase in interval between the top of the "Oswego" and the top of the Bartlesville is most rapid to the southeast and to the northeast, less rapid to the southwest and the west, and slowest to the south and the north, and to the east from the south end of the area.

The Bartlesville sand in this region is generally recognized as consisting of two distinct portions, in many places separated by a shale break. The upper part, called by most drillers the "gas sand," is usually much thinner than the lower part, which is called the "Bartlesville oil sand." Some logs indicate the upper and some the lower part as the darker colored. The total thickness of the Bartlesville sand, as recorded in logs of wells which are said to have penetrated the shales below it, ranges from 10 to 170 feet in these two townships. The sand is thinnest in the center of the western part of T. 27 N., R. 12 W., where the drillers claim the "gas sand" is absent.

Rocks between Bartlesville sand and "Mississippi lime."—The logs of the deeper wells indicate that the top of the "Mississippi lime" occurs from 20 to 200 feet below the base of the Bartlesville, though the most frequently mentioned intervals lie between 60 and 100 feet. This interval is usually indicated as occupied by shale or "slate." A few logs, however, record a sand, 30 feet or less in thickness, just above the "Mississippi lime." This sand is called the Burgess sand in these townships. In places it yields a little oil.

"Mississippi lime."—As known in this area, the "Mississippi lime" consists of limestone interbedded with chert and sandstone. This limestone is usually more or less cherty. Gas is obtained in considerable quantities from the upper part of the "Mississippi lime." Only two wells have penetrated it to any depth below the gas horizon. These two wells in sections 17 and 29, T. 27 N., R. 12 E., have drilled through 273 feet and 305 feet, respectively, of the lime without passing through it. Neither well appears to have penetrated a thin shale series such as usually lies above the "Wilcox" sand to the south, nor does the Ordovician lime stone seem to have been reached. Both are dry holes. It is unfortunate that these wells could not have been drilled to about 350 feet below the top of the "Mississippi lime," as this might have demonstrated the presence of a deep productive bed. From a study of published data[7] on the "Wilcox" sand and the "300-foot break" in the "Mississippi lime" as well as a review of the logs of many of the deep wells in Osage county, the writers are of the opinion that the "Wilcox" sand may be present in these townships. If so, it probably lies about 350 feet below the top of the "Mississippi lime." Tests should be made on the Jessie Creek anticline and the Panther Creek anticline either by deepening some of the present wells or by new drilling on the crests of the anticlines, to a depth 400 feet below the top of the "Mississippi lime." Great care should be exercised to obtain a complete and accurate record of the strata below the top of the "Mississippi lime." If this is done, two tests at the localities mentioned would be almost sure to prove the presence or absence of oil-bearing beds at the "Wilcox" horizon.

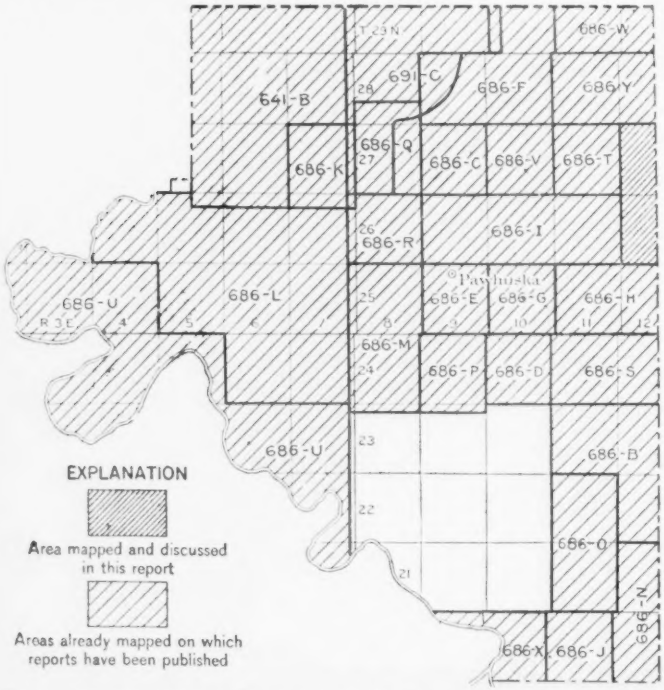


FIGURE 12.—Key map of Osage Reservation showing areas discussed in this and previous bulletins of the United States Geological Survey.

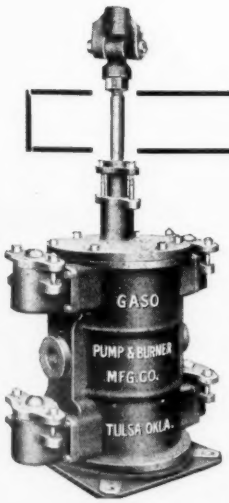
STRUCTURE.

General Features.

In the eastern part of Osage County 1,500 to 2,000 feet of rocks, composed largely of shale, rest on a series of pre-Pennsylvanian strata consisting mainly of limestones with some sandstones, cherts, and thin shales. These in turn are underlain by crystalline rocks. In response to the various deformational forces these lower hard rocks, or competent strata, have been folded and faulted. The overlying softer or relatively incompetent Pennsylvanian rocks were naturally similarly deformed, but probably with a magnitude and complexity of structure decreasing upward, owing in part to the compression and squeezing out of the shales. However, small faults in the lower competent rocks might have resolved themselves into more complicated structure in the higher rocks. Therefore, the structure of the surface beds should be and probably is considerably different in detail from that of the lower beds.

To portray the deformation absolutely, a bed that was deposited in a perfectly

[7] Greene, F. C., Oklahoma's stratigraphic problems: Oil and Gas Jour., vol 18, No. 49, p. 54, 1920. White, L. H., and Greene, F. C., Correlation of the Wilcox sand in the Okmulgee district with the Osage: Am. Assoc. Petroleum Geologists Bull., vol 5, No. 3, p. 399, 1921. Aurin, F. L., Clark, G. C., and Trager, E. A., Notes on the subsurface pre-Pennsylvanian stratigraphy of the northern Mid-Continental oil field: Am. Assoc. Petroleum Geologists Bull., vol. 5, No. 2, p. 117, 1921.



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horizontal position is needed as a datum plane. Very few beds are being deposited in such a position today, and probably none of the Pennsylvanian beds of Osage County were deposited in such a position. It is evident that the surface beds in the two townships here described must have been deposited more unevenly than those of the western Osage country, and therefore any contour map of the surface beds in these townships obviously could not portray the minute details of structural conditions if structure is defined as attitude due to deformation alone. However, the oil geologist and the person interested in the occurrence and recovery of oil are more interested in the present attitude of the rocks relative to sea level than in the details of deformation. Therefore, the term "structure," as used in this paper and in the previous papers in this bulletin, refers to the attitude of the rocks relative to sea level, regardless of whether that attitude is due to deposition or to deformation.

Surface Structure.

The 10-foot contour lines shown on Plates LVII and LVIII are based entirely upon observations made on rocks that crop out at the surface. They represent the elevation above sea level of a hypothetical bed 542 feet below the top of the Revard sandstone. This datum plane is 375 feet lower than the datum plane used in T. 25 N., R. 12 E., 465 feet lower than that used in Tps. 26 and 27 N., R. 11 E., and 765 feet lower than that used in T. 28 N., R. 12 E. This relation causes the contours to interfinger with those of the bordering townships where the structure is similarly interpreted. Along the east of T. 27 N., R. 11 E., however, a convergence of higher beds which are absent from T. 27 N., R. 12 E., caused a different interpretation of the structure. This difference is also accentuated because the datum plane used west of the line between the two townships is above the surface of the ground, and the datum plane used east of the line is below the surface.

Several faults in this area are clearly indicated by the actual displacement of beds in one or more places along the fault line. The existence of other faults is proved by the relations and elevations of adjacent beds.

A small fault, in the northern part of sec. 19, T. 27 N., R. 12 E., has a maximum throw of about 10 feet. It is less than half a mile in length, strikes a little west of north, and probably has but little effect on the collection and recovery of oil.

A fault about 1¼ miles long, in secs. 16, 21, and 22, in the same township, is of the scissors type and has a maximum throw of a little more than 15 feet. Its main importance appears to be in relation to the collection of oil in a shallow sand, as noted in the description of the Wiser Hill pool.

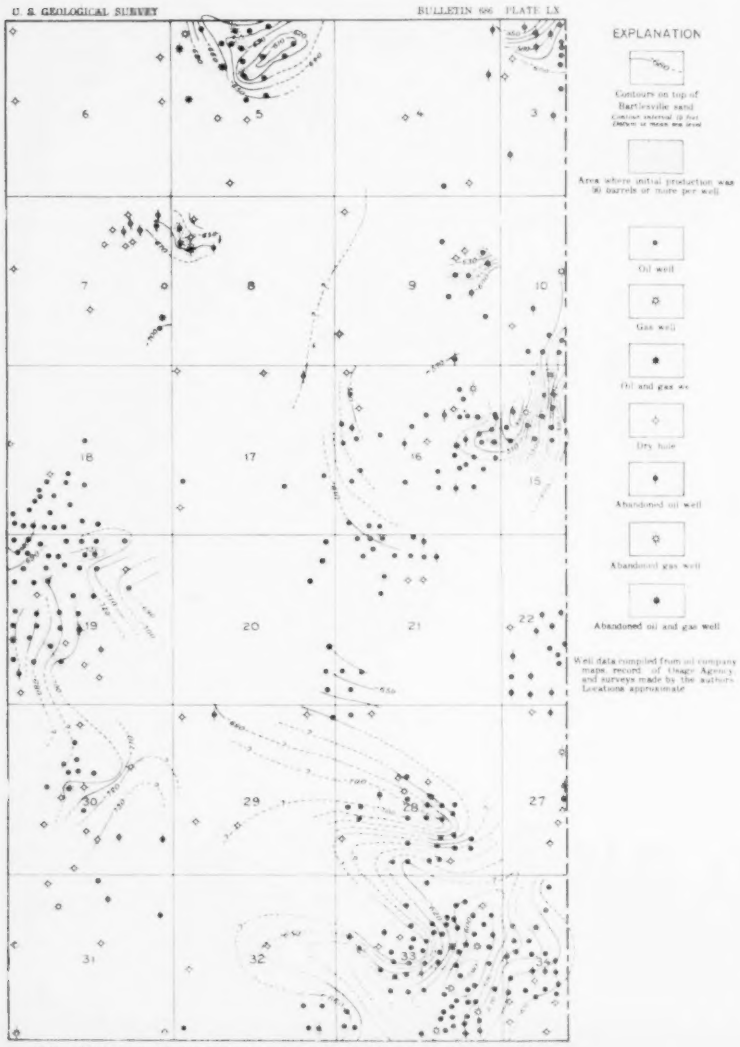
The outcrop of the Dewey limestone in the northwest corner of sec. 15, T. 26 N., R. 12 E., and its relation to the exposed beds to the northwest appear to demand a fault in the narrow alluvium-covered area between these exposures. The throw of this fault is probably 50 feet or more. The southwestward swing of Viza Creek is probably due to this fault line. The direction of the two contour lines on the island of Dewey limestone is purely hypothetical, as an undetermined amount of the limestone has been eroded from part of this area—enough, at least, to make it impossible to determine the direction. High initial production of oil in the eastern part of sec. 9, just west of this line, is at least additional suggestive evidence of this fault.

Three faults, which are probably but not certainly connected, extend from the SE. ¼ sec. 20, T. 27 N., R. 12 E., through secs. 29, 28, and 33 in this township and secs. 5, 8, 7, 18, and 19 in the township to the south. The total length of the three faults is therefore about 7 miles. The end components of this system are northwest-southeast faults. The northern fault was seen in two places, with a downthrow on the west side of about 10 feet in the SE. ¼ sec. 20 and a maximum downthrow on the east side of about 30 feet in the SW. ¼ sec. 28. The conclusion that these two parts of this fault are connected under the cover of alluvium is based on observed directions of the fault strikes.

The southern fault of this system, in T. 26 N., R. 12 E., likewise has definite evidence of displacement with a maximum throw of about 20 feet. Although the writers believe it is confined to sec 19, T. 26 N., R. 12 W., it may extend under the alluvium into sec. 18. The middle fault has a maximum throw of more than 200 feet in sec. 18, T. 26 N., R. 12 E. It extends northeastward into sec. 33, T. 27 N., R. 12 E. Except in sec. 18 the displacement is small, mainly less than 10 feet. There is a possibility that instead of being a single long fault this is a series of small faults with one major fault, all in a straight or nearly straight line. The fault line was actually observed only in the southern part of sec. 5. In sec. 18 the fault line occurs in the alluvium-covered area adjacent to Sand Creek. The relations of the well-exposed beds on each side of the creek flat, however, make the conditions perfectly obvious. The fault is of the compound scissors type. Unfortunately, the points where the ends of this fault or line of faults meets the smaller, northwest-southeast faults, are concealed by alluvium.

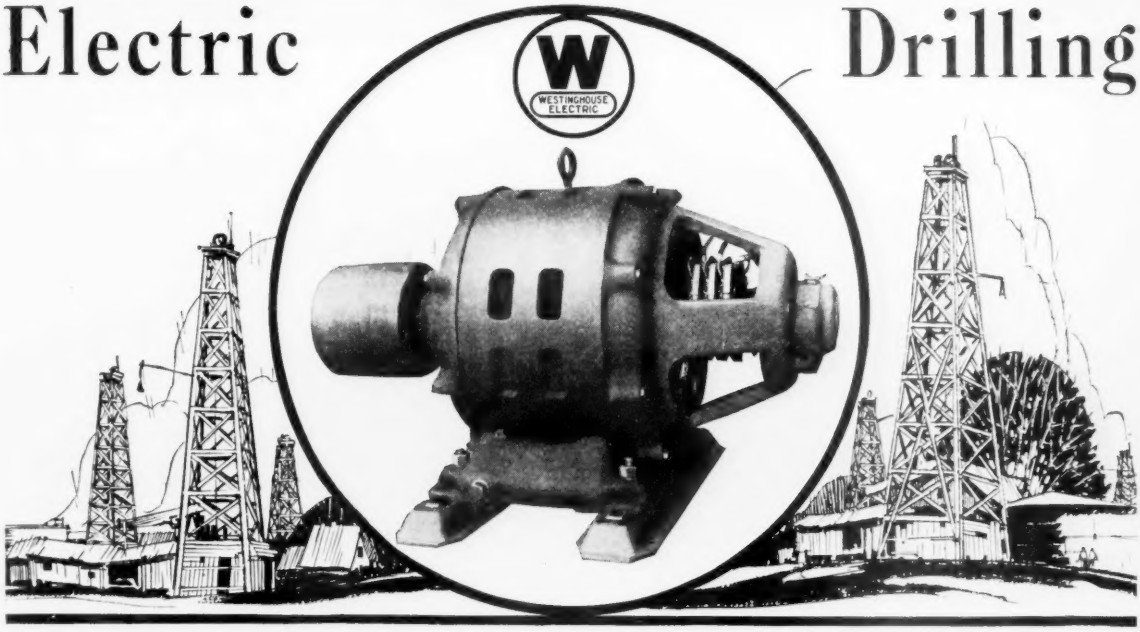
Subsurface Structure.

Elevations of about two-thirds of the wells drilled in these townships were obtained by the writers. Unfortunately the



MAP SHOWING WELL LOCATIONS AND CONTOURS ON TOP OF BARTLESVILLE SAND IN T. 26 N., R. 12 E., OKLAHOMA

Electric Drilling



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logs of many of these wells appear to be unobtainable, and some of the records that are available are so incomplete as to be of little use. However, enough information has been gathered to reveal some very interesting facts regarding the underground structural conditions. As indicated on page 401, a convergence between the Bartlesville sand and the "Oswego lime" centers in T. 26 N., R. 12 E., where the interval between the tops of these beds is as small as 330 feet. This convergence is practically continuous from an area at least as far south as T. 15 N., R. 12 E., where the interval exceeds 800 feet, if the writers are correct in assuming that the Bartlesville sand of the Bartlesville region is in part equivalent to the Glenn sand of the Okmulgee region. Westward from T. 26 N., R. 12 E., the interval probably increases more slowly. However, there is considerable doubt as to the continuity of the sandstone beds in the Cherokee shale in that direction and also to the east. Probably a number of different beds or lenses have been called Bartlesville sand. The evidence at present available suggests that these sandstone lenses in the Cherokee shale of eastern Osage County were deposited as long, narrow north-south sand bars which, at least in places, overlap.

The upper part of the Bartlesville sand is shown by contour lines on Plates LIX and LX. In mapping this structure some logs were used which gave only the depth of the top of the producing sand, and in connection with such logs estimates were made as to the depth of the top of the Bartlesville sand (top of the so-called "gas sand"). This depth varies even between adjacent wells and much more between widely separated areas. It must therefore be recognized that, although the maps show the general surface of the Bartlesville sand, they may be somewhat inaccurate in minor details. The uneven surface and channels in this sand would of course make its surface differ considerably from that of the contoured upper beds, as shown on Plates LVII and LVIII.

In T. 26 N., R. 12 E., so many of the logs fail to indicate the position of the "Oswego lime" that no contours on that bed are shown. In T. 27 N., R. 12 E., where sufficient information exists, the tops of both the Bartlesville sand and the "Oswego lime" are contoured. In the Wiser Hill pool the "shallow sand" offers the only evidence sufficient for drawing underground contours.

A comparison of the major structural features shown on both the subsurface and surface maps shows that there is a general resemblance. However, these features are slightly displaced horizontally and are of somewhat greater magnitude and complexity in the lower beds than in the surface beds. The subsurface evidence would suggest that the throw along fault lines is greater in the lower beds than at the surface. Unfortunately, the writers were unable to obtain many logs of the wells in sec. 18, T. 26 N., R. 12 E., where the greatest surface fault throw exists.

No attempt will be made to present positive statements regarding the relations of surface structure to that of the oil-bearing beds, for the data available in this area are too incomplete to justify it. The relations suggested below are far from established, but the available evidence indicates their probability, and they should be borne in mind by students of adjacent areas.

Domes and closed anticlines expressed in the surface beds are almost invariably associated with domes in the oil-bearing beds, although these domes rarely coincide exactly. The doming in depth is, as a rule, much sharper than that at the surface. For example, the dome in the Bartlesville sand under the Jessie Creek anticline has a closure of 30 feet or more, as compared with 10 feet at the surface. The Midland dome has a closure of 40 feet or more in the oil sand as against 20 feet in the surface beds.

The crests of the deep-seated folds lie to the north of the surface crests in both the Jessie Creek anticline and the Midland dome. In the former the highest point in the Bartlesville sand is about 500 feet due north of the corresponding point shown by the surface beds. In the latter the crest of the Bartlesville dome is about 2,000 feet east-northeast of the crest in the surface beds. Neither of these folds shows pronounced similarity between shallow and deep-seated folding, but in each the offset lies along one axis of the dome.

The relation between the axes of plunging anticlines or anticlinal noses seems to be fairly regular. Without exception, in those available for study, the shallow and deep axes are approximately parallel. On one of the offshoots of the Jessie Creek anticline they practically coincide. On a second they are parallel, but the Bartlesville fold is offset about 1,000 feet to the north. This last relation is shown also by the anticlinal nose in sec. 30, T. 26 N., R. 12 E., and more doubtfully by the one in sec. 18, T. 27 N., R. 12 E. The axes of surface and deep plunging anticlines in section 22, T. 27 N., R. 12 E., coincide.

Although all the domes and plunging anticlines manifested at the surface appear to be associated with similar features in depth, the reverse does not necessarily hold, as is shown by the South Butler Creek pool. In that pool the Bartlesville sand is flexed into two domes separated by a shallow syncline. The only surface feature that may be interpreted as a possible reflection of this domal structure is a very gentle anticline whose northeastward-plunging axis crosses above the saddle between the two anticline folds in the Bartlesville sand. The fact that the axes of the Bartlesville folds parallel that of the surface fold indicates a relationship, in spite of its slight surface manifestation.

The relation between surface and deep-seated synclinal axes is remarkably regular. With the exception of the sharp trough in the Bartlesville sand in sec. 28, T. 26 N., R. 12 E., such deep and shallow axes agree surprisingly in position, although of course the surface folds are much broader and more gentle than the deeper ones. The Bartlesville syncline in sec. 28, T. 26 N., R. 12 E., appears to be reflected in the surface beds about 2,000 feet to the north.

Relation Between Structure and Production

It would not be justified to attempt, from the meager evidence presented by these two fractional townships, to draw general conclusions applicable to the entire Osage Reservation or even to a large fraction of it. However, the relation between structure and production in these townships should be pointed out in order that it may be a basis for future comparisons.

It may be stated without hesitation that anticlinal structure exhibited by surface beds in this area has in most places indicated commercial amounts of oil. There are within the area eight folds that are marked by gentle doming of the surface beds. Of these, seven have been drilled, and on six of them oil in commercial volume has been found. On four of them oil or gas was found underlying the portion of the surface encircled by closed contour lines on the maps. The one anticline that has failed to yield oil or gas in response to drilling has not been adequately tested, and it is believed certain that oil will yet be found there.

Of the oil pools that have been developed on closed anticlines the largest and most productive pools are on the largest and steepest folds. The best pool on an anticlinal fold in this area is on the Panther Creek anticline, in secs. 18, 19, and 30, T. 26 N., R. 12 E., which is the most pronounced anticline in the area. Second in magnitude is the pool on the Jessie Creek anticline, and third is that on the Midland dome.

The relation of productivity to surface expression of structure is irregular. However it is worthy of note that the largest wells were not found under the crests of the surface folds on any of the anticlines. On the Panther Creek anticline they are both east and northwest of the crest and about 10 feet below it. On the Jessie Creek anticline they are on the north flank, 10 to 30 feet below the crest. On the North Jessie Creek dome they are low on the north flank. On the Midland dome they are 20 to 30 feet below the crest, on the northeast flank. Without exception the large wells are found north of the surface crest. This is in large part explained by the relation of the surface structure to that of the oil-bearing beds.

No general relation between steepness of dip and productivity could be established in this area. Of the anticlines in these townships those with steep flanks have yielded more oil and better wells than the more gentle folds, but it is known that in many other parts of Osage County no such relation exists.

The importance of plunging anticlines can not be judged by the evidence in these townships. It is believed that such anticlines are developed along definite lines of deformation, and that where two such lines intersect, as in the SE. ¼ sec. 18, T. 27 N., R. 12 E., there will be doming of the oil sand with consequent accumulation of oil. Except where such doming is present the plunging anticlines are believed to be only a little more promising territory than the unflexed monoclines, although the excellent yield of the northeastern part of the Wiser Hill pool, in sec. 22, T. 27 N., R. 12 E., may be considered by some to refute this statement.

The single broad terrace or structural flat in this area yields no criteria for comparative statements. On it a number of dry holes and about an equal number of producing wells have been drilled.

The potency of faults in bringing about oil pools is believed to be demonstrated by the Wiser Hill pool and the producing area along Viza Creek. Faults are unquestionably present in these pools, and the existence of the pools may be explained by the presence of faults, known or assumed. However, it must be conceded that the demonstration rests largely upon theory and can not be considered proved.

A review of the locations of dry holes with respect to the structure of the outcropping beds is illuminating. Some 81 dry holes were located by the writers. Of

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these 10 are high on anticlinal, 12 are low on anticlinal flanks, 36 are on monoclines or gentle anticline noses, and 23 are in synclines. One well on the Midland dome, shown as a dry hole on the map, did not reach the oil sand. The 22 dry holes listed as on anticlines include five on the North Butler Creek terrace, which is not, properly speaking, an anticlinal fold. Most of the other dry holes on anticlines are either surrounded by producing wells or mark the outer limits of pools. The dry holes in the synclines, on the other hand, are for the most part not associated with producing wells. Of the 35 wells known to have been drilled in clearly defined synclines as shown by the surface beds, 12 have produced some oil, as contrasted to 23 that have been barren.

The relations between production and the structure of the oil sand are more complex than those of production and surface structure. The fact that every important field in the area, with the exception of the Wiser Hill pool, shows doming of the oil sand unquestionably signifies that such doming is important, if not essential. It is true that sharp synclinal folding is also present in the oil sand in some of these fields, but the oil wells are almost without exception in the heads of such synclines, where they rise steeply on the flanks of anticlinal folds. In the Wiser Hill pool, where there is no doming of the oil sand, the accumulation is almost certainly due to faulting.

The relation of dry holes to anticlinal structure in the oil sands can not be stated, for the structure of the oil sends is known only in comparatively small portions of these townships. However, it is noteworthy that of all the dry holes in this area but three are known to be on pronounced anticlinal folds in the oil sand.

The outlines of the oil fields are more closely connected with the anticlinal folding of the oil sands than with that of the surface rocks. In all the anticlinal pools the crests and much of the axes of the subsurface anticlines are within the oil-yielding area. The positions of big wells with respect to axes and crests, however, vary greatly. Only in the South Butler Creek field are the large wells over the crests of the domes. Elsewhere they are from 10 to 60 feet below the crests and are commonly on the west or northwest flanks of the fold; although some have been found in both south and east flanks.

A tendency for oil to be found along certain lines or trends has frequently been suggested. In this area such a tendency is strikingly apparent in the Wiser Hill pool and is also very noticeable southwest of the Viza Creek dome. In both of these localities the trends are to the northeast. There is a suggestion of a northeast trend in the Panther Creek pool. In the South Butler Creek pool the line of producing wells trends due north.

These trends appear to be determined by structural conditions rather than by the distribution and nature of the oil sand or the subjacent shales. The two fields that show the most definite trends are thought to be related to faults that trend in the same directions as the oil pools. Elsewhere the trends conform closely to the axes of deformation in the underlying beds.

Structure In Detail.

T. 26 N., R. 12 E.

In the parts of T. 26 N., R. 12 E., that are covered by alluvium the structure could not be determined from the surface geology. Such areas include the valley of Turkey Creek in sec. 6, the valley floor of Sand Creek, and portions of secs. 3, 4 and 10. The large synclinal basin, centering in the SW ¼ sec. 4 and the NE. ¼ sec. 8 would suggest that the west slope of a fold favorable to oil accumulation occurs in sec. 3. This suggestion is corroborated by the presence of oil wells drilled in the north half of that section and in the section to the east. A structure probably due to faulting occurs in the N. ½ sec. 15.

Panther Creek occupies about the center of a north-south syncline, the largest syncline in the township.

This township has been drilled extensively, and probably the higher sands, including the Bartlesville, have been drained of much of their extractable oil. The drilling, however, has not been deep enough to determine the presence or absence in this township of oil-bearing beds below the top of the "Mississippi lime." The writers have suggested some locations for such exploration in the following detailed descriptions.

Jessie Creek anticline.—The Jessie Creek anticline, so named because it is near the head of Jessie Creek, lies mainly in secs. 33 and 34. It extends northeastward an undertermined distance and southwestward into sec. 4, T. 25 N., R. 12 E., where it is separated from the Forty-seven anticline by a short saddle. The oil obtained in wells on the Forty-seven anticline is said to come exclusively from the Bartlesville sand, the Peru sand being unproductive.[8] In the Jessie Creek anticline, however, many of the wells obtain oil from the Peru sand and many from the Bartlesville sand. The Squirrel sand, though recorded in many of the logs of the deeper wells, is usually noted as barren. One well, however, produced 3,000,000 cubic feet of gas from this sand. Both oil and gas have been produced from this anticline. To the north and the west of its crest the only holes that proved to be dry were far down the sides of the anticline. Of the many wells drilled on this anticline in T. 26 N., R. 12 E., only one, a gas well, appears to have reached the "Mississippi lime." In the northwestern part of the SW. ¼ sec. 32 a dry hole penetrated the Burgess sand, but it is so far down the flank of the anticline as to be almost in the bottom of a syncline and could hardly be expected to produce oil in quantities from any sand. The Jessie Creek anticline is pretty well explored for oil in the Bartlesville and higher sands, but should be drilled to determine the possibility of oil in or below the "Mississippi lime." Good locations for tests of the lower beds are near the center of sec. 33, the center of the west line of the SW. ¼ sec. 33, the center of the SE. ¼ sec. 33, and the center of the south line of the SW. ¼ sec. 28.

During the first quarter of 1921 the portion of this anticline in this township furnished approximately two-fifths of the total production for the township.

North Jessie Creek dome.—The North Jessie Creek dome lies mainly in the SE. ¼ sec. 20 and SW. ¼ sec. 21, with a small part in the extreme northwest corner of sec. 28 and the northeast corner of sec. 29. It has a closure of about 20 feet, but its top is divided into two small slightly domed areas. The southwestern part of this dome has been well tested and is now producing from the Bartlesville sand. It seems possible that the producing area may be extended to the north and the west. There seems to be a definite trend of productive area southwestward from the Viza Creek dome, which if extended would cross the anticlinal nose extending west from the North Jessie Creek anticline in the SE. ¼ sec. 20. Testing the Bartlesville sand in the center of the SW. ¼ SE. ¼ sec. 20 accordingly seems justifiable. The north half of the top of the dome has not yet been tested, although about half a mile to the northeast some dry holes have been drilled.

Panther Creek anticline.—The Panther Creek anticline is in the western part of secs. 19, 30, and 31 and the adjacent sections of T. 26 N., R. 11 E. As the datum planes used in mapping this township and T. 26 N., R. 11 E., are 465 feet apart, the contours on the map in this paper interfinger with those on the map of the adjacent township.[9] This interfingering slightly changes the shape of the upper closing contours. The fault in sec. 19 is just east of the area mapped by Clark and consequently was not noted by him. The presence of this fault changes somewhat the aspect of the small domes on this anticline, showing that there are but three, instead of four, as he describes.[10]

The oil produced on this anticline is obtained mostly from the Bartlesville sand, although some comes from the Peru sand. The anticline has been fairly well explored so far as these sands are concerned, but the "Mississippi lime" has not been penetrated by many wells nor to any great depth. The deepest well stratigraphically in this township of which the writers have knowledge is in the NW. ¼ sec. 31. This well is said to have been drilled 126 feet into the "Mississippi lime" and to have had an initial production of 26,000,000 feet of gas from the first break in the lime. Most of the oil produced from this anticline is obtained in the township to the west. There is a good possibility, however, that oil may be found below the gas horizon in the upper part of the "Mississippi lime" The 350 or 400 feet of strata below the top of the "Mississippi lime" on this anticline should unquestionably be tested by wells located high on the anticline.

Midland dome.—The Midland dome, named from the Midland Oil Co., which owns the lease on it, occupies the western two thirds of sec. 5 and probably much of sec. 6. There is also a small subsidiary dome in the SE. ¼ sec. 5. The main dome has a closure of about 30 feet. The fault to the east, if persistent in depth, would add somewhat to the area from which oil might be recovered. The rocks are concealed in the greater part of sec. 6 by alluvium and wash, so that the surface structure there can not be determined. The beds appear to lie very flat, dipping slightly to the west with steeper dips along the south and west edges of the section. It is possible that either a small dome or a small depression may occupy the central part of sec. 6. Four dry holes have been drilled in this section, two on the east edge of the NE ¼ and one each in the northwest corner and the southwest corner of the NW ¼. The two latter wells were drilled to the "Mississippi lime." but the

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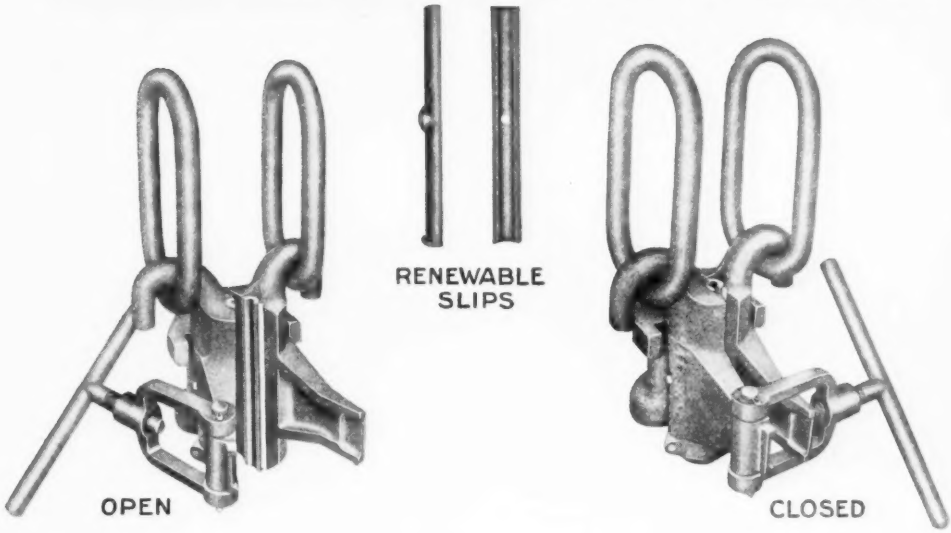
[8] Hopkins, O. B., U. S. Geol. Survey Bull. 686-H, pl. 11 and p. 85, 1918.

[9] Clark, F. R., U. S. Geol. Survey Bull. 686-I, pl. 15, 1918.

[10] Idem, p. 116.

IDEAL WIRE LINE CLAMPS



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writers have no data on the two eastern holes. Just to the east of these holes, in the western part of sec. 5, wells are producing oil from the Bartlesville sand and gas from the top of the "Mississippi lime." Several interpretations of the underground conditions are suggested by the presence of the two dry holes in the eastern part of sec. 6. They have encountered "tight" sands; they may be just west of the area where the oil has collected; or there may be a small dome in the center of sec. 6, which would mean that these two holes were in a small syncline.

On this dome, as on other favorable oil areas in this township, no well has tested the horizons below the upper part of the "Mississippi lime." It is a particularly advantageous location for such a test, as the development has permitted determination of the position of the folding in the Bartlesville sand. The test place for a deep test would appear to be the center of the NW. ¼ NE. ¼ sec. 5, T. 26 N., R. 12 E.

It is possible that a small pool can be developed on a little dome just east of the fault line in the SW. ¼ sec. 5. There is a distinct axis of folding here, and even though the area of the fold is very small, there is a possibility of fair production. The presence of faults suggests the possibility of production from some shallow sand as well as from the Bartlesville sand or the "Mississippi lime."

Sec. 18.—A half dome occupies the SE. ¼ sec. 18. It is made up of beds showing a steep reverse dip on the east and is bounded by a fault plane on the west. There is a probable closure of at least 70 feet against the fault. As the greater part of sec. 18 is covered with alluvium, it is not possible to determine the exact structural conditions. Unless an unmapped fault occurs in the alluvium-covered area of Sand Creek, the structure is probably about as indicated on the map (Pl. LVII). This half dome has a very small area from which to drain oil and may for that reason yield but little. However, the fault plane may have acted as a conductor of oil from deeper beds, and the dome should certainly be tested. A good location for such a test is a little north of the center of the SW.¼ SE.¼ sec. 18.

A depression occurs in this section, and its deepest part is just a little east of the center of the section. A number of wells have been drilled in the SW.¼ sec. 18, but the writers have been unable to procure logs of these wells. From the surface structure it would appear to be undesirable to drill more wells in this section, except as suggested above.

Viza Creek dome.—The Viza Creek dome occupies the NW.¼ sec. 15 and part of the NE.¼ sec. 16. Its presence is suggested by the outcrop of the Dewey limestone. The cover of alluvium conceals most of the surface detail of this dome. The underground structure shows strong dips to the east and south, but lack of positive evidence leaves the condition of the northwest side of the dome a matter of surmise. However, the suggestive evidence indicates that a major portion of the dome closes against a concealed fault to the northwest. Unlike the somewhat similar dome in sec. 18, this dome is probably free to drain oil from the south and southwest. Oil is obtained in it from both the Peru and the Bartlesville sands.

T. 27 N., R. 12 E.

A small portion of T. 27 N., R. 12 E., is covered with alluvium, so that no surface structure contours could be drawn for sec. 34 and parts of secs. 27, 28, and 33. The most prominent structural features are a flat with slight doming that occupies the central part of the township, a pronounced syncline that plunges westward across the township about 1½ miles south of the north edge, four faults, and five plunging anticlines, two of them with local doming. To the lack of pronounced doming is probably due in part the small amount of drilling that has been done in the north half of the township. The presence of these faults and the long axes of the plunging anticlines, considered in connection with their probable relation to oil production and subsurface conditions, make the study of this township of special interest to the oil man as well as to the geologist.

Wiser Hill pool.—The Wiser Hill pool occupies the NE. ¼ and S. ½ sec. 21, the north third of sec. 28, and most of secs. 15 and 22. This area is locally known as Wiser Hill, from the oil company that is operating the leases. Over 90 wells have been drilled in this pool. The oil is obtained from a sand 12 to 22 feet thick, known locally as the "shallow sand." This sand is recorded as being from 30 to more than 100 feet above the Big lime and from 117 to 222 feet or more above the Peru sand, but some of this variation is probably due to inaccuracy in the logs, for the logs showing the lower sands are old and appear to be generalized. The wells drilled in this pool to the Peru and Bartlesville sands found them nonproductive of oil. Wells east of the pool, in the Washington County part of this township, obtain oil from the Bartlesville sand but none from the "shallow sand." This sand, or at least a thin sand that bears the same relation to the Big lime, is recorded in some of the logs from other parts of the two townships considered in this paper, but no oil appears to have been noted in it, although some of the wells whose logs records its presence are favorably located with reference to the structure. Showings of gas recorded in secs. 29 and 32 of this township appear to come from this sand.

At least three sands that lie stratigraphically above the "shallow sand" of the Wiser Hill pool have given showings of gas in wells drilled in Tps. 26 and 27 N., R. 12 E., and apparently they have in some logs been confused with the sand of the Wiser Hill pool. These sands are about 675,560 and 450 feet above the Big lime, and the lowermost of them is therefore 300 feet or more above the horizon of the "shallow sand" of the Wiser Hill pool. The highest of these sands contains some gas in sec. 34, T. 26 N., R. 12 E. The next lower one yielding gas shows in sec. 29, T. 27 N., R. 12 E., and in secs. 5 and 34, T. 26 N., R. 12 E. The lowermost sand showed a gas content in sec. 17, T. 27 N., R. 12 E., and secs. 5 and 34, T. 26 N., R. 12 E.

The surface geology shows that a fault in secs. 16, 21, and 22 cuts through the middle of this pool. The subsurface geology indicates that this fault has a greater throw at the horizon of the "shallow sand" than at the surface. The portion of the pool on the west side of the fault is on a gentle raise from a structural flat or terrace to the northwest. The portion of the pool on the east side of the fault is on beds having a much steeper northwest dip. A second fault occurs just southwest of this pool. West of this fault oil is produced from the Bartlesville sand but none from the "shallow sand." It is also noteworthy that the long fault in sec. 33 and in T. 26 N., R. 12 E., is parallel in trend to the Wiser Hill pool. Whether or not this particular fault affects the "shallow sand" southeast of the pool, the fact that the Wiser Hill pool has practically the same alinement must be considered significant.

The oil in this pool may have been derived from the shales just below the "shallow sand," or it may have escaped from lower sands along a fault plane or planes and collected in the "shallow sand." If the subjacent shale was capable of yielding enough oil to justify the drilling of more than 90 wells, at least two of which were put down as early as 1904, it is only reasonable to expect that similar oil-producing conditions at this horizon would manifest themselves elsewhere in these townships. If such conditions exist, however, they have not been discovered. On the other hand, if the occurrence of a large amount of oil in the "shallow sand" in this pool is due to the collection of oil that has escaped from a deeper sand along a fault line, the barrenness of lower beds in this pool and of the "shallow sand" outside of this pool is explained.

No anticlinal structure is present in this pool, either in the surface beds or in the oil sand, and although the southern part of the field is on the edge of a terrace in the surface beds, no such structure is certainly present in the producing sand. This condition argues against a normal type of oil accumulation.

It seems probable that the pool contains oil that migrated up the dip of deep oil-bearing sands and found an avenue of escape to the "shallow sand" along the faults in secs. 20, 28, and 29 and in secs. 16, 21, and 22. The retention of the oil was probably effected either by sand conditions or by a third fault, not manifest at the surface, which trends northeastward along the southeast boundary of the field. The outline and extent of the pool may also have been influenced by the northward-plunging anticlinal nose in sec. 22. If this hypothesis is correct oil is not necessarily to be expected in the deep beds below this pool, as there is no reason to believe anticlinal structure favorable to its accumulation exists there.

South Butler Creek pool.—The South Butler Creek pool occupies the southeast third of sec. 29, the E. ½ and part of the SW. ¼ sec. 32, and a small area in the SW ¼ sec. 28. From the surface structure this pool appears to be merely the steeply dipping north slope of the Midland dome, which lies in the northern part of the township to the south. The only doming shown by the surface beds is on a nose in the western part of sec. 32 and the NW. ¼ sec. 31, which has a single closed contour on its north end. This closure is west of the pool, and the area has not yet been tested. The east edge of the pool is limited by two faults, to which is probably due in part the marked difference in the structure of the surface beds and the Bartlesville sand. Plate LVIII shows that in the E. ½ of section 32 and the SE. ¼ section 29 the surface beds have a slightly varying northward dip.

Plate LIX shows that the "Oswego lime" is arched into a low dome whose crest is near the center of the NE. ¼ sec. 32. South of this dome there is an anticlinal nose that plunges northwestward across the SE. ¼ sec. 32.

The folding in the Bartlesville sand in

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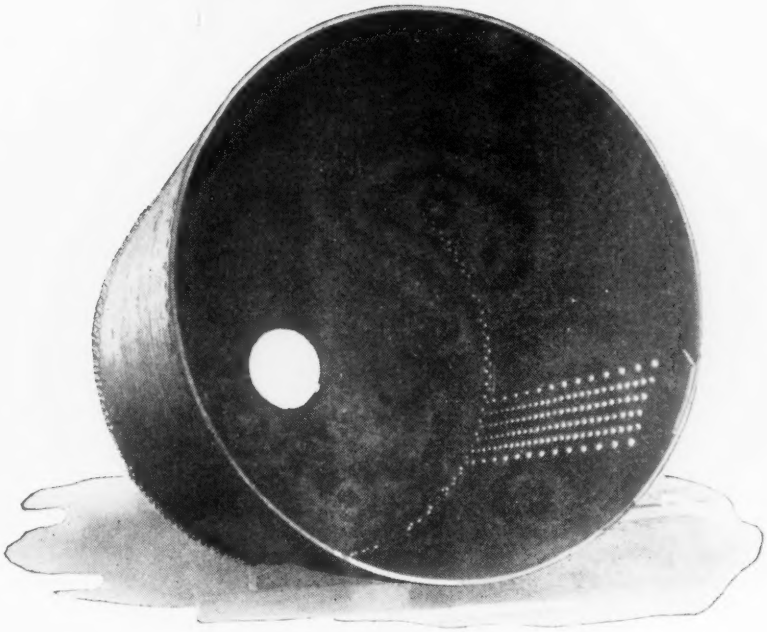

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this area agrees in a general way with that in the "Oswego," but it is more complex. Instead of a single dome, two are shown, one in the SE. ¼ sec. 29 and the other in the NE. ¼ sec. 32. There is also a plunging anticline in the SE. ¼ sec. 32 which is more pronounced than the similar fold in the "Oswego."

This pool has not been outlined by dry holes, and it seems probable that it will extend from the south-central part of sec. 29 into the NW. ¼ sec. 32. Certainly the surface structure and the observed relations between the surface and deep folding justify a test there. A good location for such a test would be the center of the NW. ¼ NW. ¼ sec. 32. A good location for testing the beds in and below the "Mississippi lime" would be the center of the SE. ¼ SE. ¼ sec. 29.

Backius anticline.—Most of the Backius anticline lies in T. 27 N., R. 11 E., but a curved spur extends eastward into the west-central part of sec. 31, T. 27 N., R. 12 E., dying out in a structural saddle about 1,000 feet northwest of the south quarter corner of the section. This anticline has yielded both oil and gas in notable amounts. The portion in T. 27 N., R. 12 E., was drilled many years ago and a small gas field was developed on it. So far as known the wells yielded no oil.

North Butler Creek terrace.—The North Butler Creek terrace occupies the eastern two-thirds of sec. 17, the W. ½ sec. 16, and the adjacent parts of secs. 20 and 21. In sec. 17 there is a single closed contour. In the center of the area outlined by this contour a dry hole was drilled 273 feet into the "Mississippi lime." From the log of this well it appears that the Peru and Squirrel sands are absent and that the Bartlesville sand is thin. This log is shown as No. 2 on Plate LVI. Oil, however, is produced from the Bartlesville sand and from a sand at the top of the "Mississippi lime" on the edges of this terrace.

The portion of this terrace that is structurally most favorable is the SW. ¼ sec. 18, where an axis of folding extending westward from the central low flat of the North Butler Creek terrace is intersected by a northward-trending axis that is parallel to and about 1,000 feet west of the east line of secs. 30 and 19. There seems to be anticlinal folding in the "Oswego lime" where these two axes intersect. A number of wells have been drilled in the SE. ¼ sec. 18 and the NE. ¼ sec. 19, but the producing territory can probably be extended to the north and east.

It is probable that there is a similar intersection of less pronounced axes on the northeast flank of the terrace in the northeast corner of sec. 17 and the southeast corner of sec. 8. This inference is strengthened by the contour of the tops of the "Oswego lime" and Bartlesville sand as revealed by the records of two oil wells and two dry holes that have been drilled on this part of the terrace. There seems to be decided doming in these lower beds, and it will be noted that this doming is to the northeast of the surface doming, its relative position agreeing in this respect with that of the subsurface folds in other parts of these townships. It seems probable that prospecting north and east of the corner of secs. 7, 8, 17, and 18 will be repaid by production.

Secs. 4 and 5.—A structural nose or plunging anticline trends westward across the northern parts of secs. 4, 5, and 6. This nose is modified by gentle doming on the line between secs. 4 and 5, due, apparently, to the north-south axis of folding that affected the north-eastern part of the North Butler Creek terrace.

No wells have been drilled in this area, and as the surface structure indicates that there should be pronounced doming in depth, and as this nose should receive the oil from much of secs. 5 and 6, it is recommended that a test be drilled near the east line of the S. ½ NE. ¼ sec. 5. Oil may be found in the Bartlesville sand, at the top of the "Mississippi lime," or about 350 to 400 feet below the top of the "Mississippi lime."

Oil And Gas.

Development.—Oil was discovered at Bartlesville, just east of the area mapped, in 1894, but owing to complications in leases, active operations were not begun until about 10 years later. There were no wells of great yield, although some are said to have had an initial daily production of 1,000 barrels, but there were many that started with several hundred barrels a day, and the Bartlesville-Dewey pool soon attracted widespread attention. The pool was rapidly developed, and in 1906 the production began to decline. In that year the average initial daily production was about 73 barrels, and by 1914 this average decreased to 10.4 barrels. It is reported that at the end of 1914 there were 4,816 producing wells in the pool.[11]

The western part of the Bartlesville-Dewey pool extends into the area here mapped, but because of its location in Oswego County, where conditions of leasing are different, development has been retarded.

Active drilling was begun in 1903 in the eastern tier of sections of T. 26 N., R. 12 E., in Osage County, adjacent to the developed area in the vicinity of Bartlesville. A number of good wells were found, including a few small gushers. Drilling soon spread throughout the leased area, and by 1917 at least 464 wells had been sunk in the area here considered. Of these, 139 were in T. 27 N., R. 12 E., and 325 in T. 26 N., R. 12 E. About 20 per cent of those in the northern township and 14 per cent of those in the southern township were dry holes. By the middle of 1921 at least 703 wells had been drilled in this area, about 232 in the northern township and 471 in the southern township, of which about 20 per cent and 18 per cent respectively are dry. Many wells have, of course been abandoned.

Production.—For the three months of January, February, and March, 1921, the total production of oil in the Osage County portion of T. 27 N., R. 12 E., was 20,132.4 barrels from 134 wells, or an average of about 50 barrels per well per month. During the same period the southern township did slightly better, producing 49,712.9 barrels from 267 wells, or an average of about 62 barrels per well per month. The production from six sections, three in each township, containing a total of 48 producing oil wells, was 2,111.6 barrels for this three month period or an average of about 14 2-3 barrels per well per month, or half a barrel per day. These six sections were selected as representing the smallest production, but the producing wells are situated near more prolific wells in adjacent sections. During the corresponding three months

[11] Oklahoma Geol. Survey Bull. 19, pt. 2, p. 510, 1917.

Analyses of crude petroleum from Tps. 26 and 27 N., R. 12 E.

[By Ernest W. Dean, Bureau of Mines. Air distillation with fractionating column; barometer 735 millimeters for Nos. 00107 and 00106; 747 millimeters for No.00108]

Laboratory No.	Source and character of sample	Temperature (°C).	Fractions (per cent by volume).	Total distilled (per cent by volume).	Specific gravity.
00107	Peru sand, well No. 23, Skelton-Moore Oil Co., SW¼ sec. 34, T. 26 N., R. 12 E. Specific gravity at 15° C., 0.854 (33.9° Baume). Sulpnur, 0.13 per cent.	Up to 75	5.0	5.0	0.684
		75-100	5.2	10.2	.724
		100-125	4.3	14.5	.752
		125-150	5.2	19.7	.768
		150-175	5.1	24.8	.788
		175-200	3.8	28.6	.804
		200-225	4.5	33.1	.816
		225-250	5.5	38.6	.832
		250-275	5.5	44.1	.846
00108	Composite sample from "shallow sand" from several wells of Wiser Oil Co., sec. 21, T. 27 N., R. 12 E. Specific gravity at 15° C., 0.856 (33.6° Baume). Sulphur, 0.15 per cent.	Up to 75	2.5	2.5	.....
		75-100	4.5	7.0	.720
		100-125	6.1	13.1	.745
		125-150	4.5	17.6	.762
		150-175	4.9	22.5	.780
		175-200	4.6	27.1	.796
		200-225	4.6	32.7	.812
		225-250	5.3	38.0	.826
		250-275	5.7	43.7	.840
00106	Bartlesville sand, well No. 24, Indian Territory Illuminating Oil Co., SE.¼ sec. 32, T. 27 N., R. 12 E. Specific gravity at 15° C., 0.866 (31.7° Baume). Sulphur, 0.15 per cent.	Up to 75	4.3	4.3	.713
		75-100	4.5	8.8	.762
		100-125	2.0	10.8	.792
		125-150	3.5	14.3	
		150-175	3.0	17.3	.808
		175-200	5.4	22.7	.818
		200-225	4.5	27.2	.826
		225-250	6.4	33.6	.832
		250-275	7.0	40.6	.842

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of 1917 the average production for the same six sections was about 27 barrels per well per month.

Many of the older wells declined so that they produced but little oil, yet during the period of high prices for crude oil they could be pumped with profit when the pumper could attend to them in addition to more productive wells.

The logs of many of the wells in these townships are very incomplete, some of them giving only the depth from which oil was produced. Many of the present leases do not even possess records of all the wells drilled on the area now under their control. Of the available logs many fail to mention initial production. Some indicate only the production in the first 24 hours after the well was shot and some only that in the first 24 hours natural yield. Therefore the term "initial production" as used here may indicate either period, but where the production for both periods is given in the logs, the larger production has been used. In the following discussion and averages dry holes are not considered.

In the Osage portion of T. 27 N., R. 12 E., records of the initial production of 94 wells have been procured. Of these, 22 wells showed 50 barrels or more, including 7 that came in with 100 barrels or more. The average initial production was 35¼ barrels. In T. 26 N., R. 12 E., of 130 wells whose initial production is on record, 38 made 50 barrels or more, including 10 that produced 100 barrels or more. The average was 38 1-3 barrels.

Wells having an initial production of 50 barrels or more occur in 15 sections in this area, and most of these are located where the structure as determined from surface outcrops is favorable. Faults and anticlinal folds appear to be the main factors in determining the favorable localities. One area, the eastern part of sec. 9, T. 26 N., R. 12 E., where the initial production was large and the surface structure not exceptionally favorable, is adjacent to an alluvium-covered area on the east, under which a concealed fault probably exists, causing the larger production in that area. Structural evidence of a concealed fault was found in the section to the south, and this occurrence may be suggestive evidence of the northeastward extension of that fault.

These results show that the samples tested represent high-grade petroleum, the specific gravity of which at 15° C. ranges from 0.854 to 0.866 (33.9° to 31.7° Baume) and which yields on distillation up to a temperature of 200° C. between 22.7 and 27.6 per cent by volume.

The above analyses show the composition of three samples of natural gas from the sources indicated, collected in November and December, 1917, by air displacement. The high methane cantent of sample No. 9294, 93.2 per cent, is typical of a dry gas although the 4 per cent of carbon dioxide is somewhat unusual. The other samples show different proportions of methane and ethane in wet gases. The small amounts of oxygen represent air leakage.

Analysis of natural gas from Tps. 26 and 27 N., R. 12 E.

[By S. H. Katz, Bureau of Mines.]

Laboratory No.	Source of samples	Methane (CH_4)	Ethane (C_2H_6)	Carbon dioxide (CO_2)	Nitrogen (N_2)	Oxygen (O_2)	Specific gravity (air-1).	British thermal units per cubic foot at 760 millimeters
9294	Top of "Mississippi lime," gas well No. 45, Indian Territory Illuminating Oil Co., NW¼, sec. 31, T. 27 N., R. 12 E.	93.2	0.8	4.0	2.0	0.0	0.60	1,008
9316	Composite sample from Bartlesville sand, wells Nos. 9, 12, 15 and 28, Skelton-Moore Oil Co., sec. 34, T. 26 N., R. 12 E.	40.7	57.7	.3	1.1	.2	.....	.....
9315	Peru sand, well No. 23, Skelton-Moore Oil Co., SW¼, sec. 34, T. 26 N., R. 12 E.	11.9	85.7	.5	1.6	.3	.....	.....

F. B. Tough Selected to Succeed Ambrose as Petroleum Technologist

WASHINGTON, D. C., Sept. 9.—F. B. Tough, United States supervisor of oil and gas operations on leased public lands, has been appointed Chief Petroleum Technologist of the Bureau of Mines, to succeed A. W. Ambrose, made Assistant Director of the Bureau. Mr. Tough's appointment is effective October 1.

Mr. Tough holds the degree of Engineer of Mines from the School of Mines, Columbia University, New York. Before entering the service of the Bureau of Mines, he had several years' experience as resident geologist for the Southern Pacific Company in various oil fields in California. After coming with the Bureau of Mines, Mr. Tough specialized in problems dealing with the exclusion from oil and gas wells of encroaching underground waters. Bulletin 163, "Method of shutting off water in oil and gas wells," written by Mr. Tough, has been widely circulated. In 1919 and 1920 Mr. Tough was in charge of conservation work in the Wyoming oil fields, under the co-operative agreement with the Rocky Mountain Petroleum Association. Under this agreement the Rocky Mountain Petroleum Association contributed $30,000 a year to enable the Bureau of Mines to demonstrate methods of drilling and operating wells in order to minimize the waste of oil and gas and damage to oil and gas sands. The results obtained in the two years' duration of this work have been published in a special report, issued by the association.

In the spring of 1920, Mr. Tough was appointed United States Supervisor of Oil and Gas Operations under the provisions of the General Leasing Act, continuing, however, to act as engineer in charge of the Rocky Mountain Petroleum Association work until its completion, the two pieces of work overlapping by about six months.

As supervisor of oil and gas operations, it became his duty to develop a system and organize a corps to supervise gaging of oil and the metering of gas produced from government lands, and to supervise drilling and producing operations thereon with a view to the prevention of surface and sub-surface waste. While much remains to be done, it may be noted that well equipped offices in charge of experienced oil men have been established in the various centers of production from government lands. Through these men and their associates the government's interests in these oil properties are being protected. Although the Leasing Act and regulations established under it provide wide discretionary powers for the supervisor and his representatives, it has been the constant effort to avoid anything in the nature of a paternal despotism. The problems that have arisen in connection with this work have been attacked as common alike to the government and the operators on government land. Results have shown that a practical problem in the oil industry which can not be solved by such means is a very knotty one indeed.

Archibald Campbell, general manager of the Derby Dome-Wyoming Oil Company operating near Lander, Wyoming, was a visitor with friends in Casper last week

---

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—side reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

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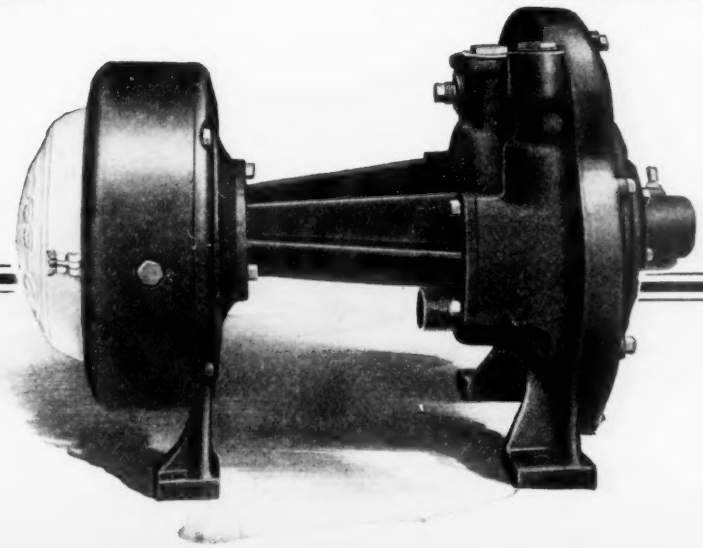

GEOLOGY OF WILES AREA, RANGER DISTRICT, TEXAS

(Continued from page 15.)

bench on fresh surface is little darker than the lower bench; top bench conglomeratic in places, rarely fossiliferous; lower bench homogeneous, lithographic, hard, brittle; weathers gray 3

Limestone, top oolitic, much recrystallized, hard, slabby; base of Home Creek limestone 3

Shale, dark brown.

Sandstone.

The interval between the Home Creek limestone and the Ranger limestone is occupied chiefly by thin sandstone and shale. The beds of sandstone are thicker and more numerous toward the west.

Strawn formation.—The Strawn formation in the Wiles area is from 2000 to 2280 feet thick and is in marked contrast to the overlying Canyon group, which is made up largely of limestone, in that it consists predominantly of blue and brown shales, sandstone, and thin beds of conglomerate. The coal beds in this formation that are mined farther east are not reported in well logs in the Wiles area, and it is probable that they either pinch out or are replaced by black shale. In some well logs limestone to a total thickness of 80 feet has been reported, but it is assumed that this is a misinterpretation of the well cuttings. An examination of the well logs plotted on Plate IX shows that at the base of the Strawn formation in Veale No. 1 well is 160 feet of blue sandy shale that apparently represents the "Millsap division" of Cummins, which is now included in the Strawn formation, and that the change from this sandy shale to the underlying black Smithwick shale is very abrupt. This blue sandy shale may be represented in the other wells either in the strata reported as sandstone by the drillers and here included in the Strawn formation or in the upper part of the dark shale here assigned to the Smithwick shale.

Rocks Not Exposed

The unexposed rocks in the Wiles area that have been penetrated by the drill comprise the Strawn formation, Smithwick shale, and Marble Falls limestone, of Pennsylvanian age, and an undetermined thickness of limestone and shale of Mississippian age, as shown in the following section:

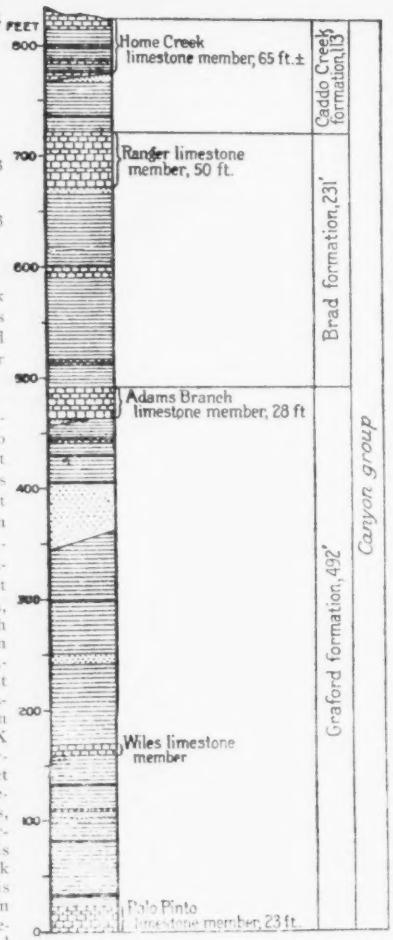

Fig. 2.—Columnar section of Pennsylvanian rocks exposed in the Wiles area, Texas

Section of Rocks Not Exposed but Passed Through by the Drill in Wiles Area

System	Series	Formation and Thickness	Character
Carboniferous	Pennsylvanian	Strawn formation 2000-2280 ft.	Thick sandstones, blue to black shale, conglomerate, thin to thick lenticular limestones; no coal
		-Unconformity—	
		Smithwick shale 530-605 ft.	Black fissile shale and black limestone
		Marble Falls limestone 560 ft.	Gray to black crystalline limestone interbedded with black shale and thin sandstone.
	Mississippian	20 ft	Black limestone
		60 ft.	Black shale

Smithwick shale.—In the Wiles area the Smithwick shale is from 530 to 605 feet thick and is made up of black fissile shale and black limestone. The base of the formation is assumed to be at the top of the first thick, persistent bed of black limestone. The logs of all the wells in this area show a persistent zone of thin beds of limestone near the middle of the Smithwick shale. These beds are known to drillers as the "Caddo lime" or "Breckenridge lime."

Marble Falls limestone.—In the Gholson No. 1 well of the Gulf Production Company, in square L-7, the total thickness of the Marble Falls limestone is assumed to be 580 feet, although this thickness may include at the base some limestone of Mississippian age, which properly is not a part of the Marble Falls limestone. The Marble Falls is made up principally of massive beds of black limestone, black shale, and oil and gas bearing sandstone. A persistent light-gray limestone in this formation, locally called the "gray lime," is of much value in correlating well logs.

Mississippian shale.—The Mississippian ("Lower Bend") shale was encountered in the Gholson well above referred to and was penetrated to a depth of 60 feet. As the top of the Ellenburger limestone, which normally underlies this shale, was not reached, the thickness of the shale in this area is not known.

STRUCTURE

Regional Structure

Two or more distinct types of regional structure may occur in a single area where rocks of one age rest unconformably on rocks of a widely separated age. This condition prevails in the North-Central Texas fields, where Pennsylvanian rocks, with a regional dip to the northwest are exposed in part of the area, and Cretaceous rocks, with a regional dip to the southeast, in other parts of the area. The following discussion deals entirely with the structure of the Pennsylvanian rocks.

The regional structure in the Wiles area is that of a monocline dipping to the northwest. The dip is constant throughout most of the area but is not uniform in amount. It averages between 45 and 50 feet to the mile but in some parts of the area is as great as 120 feet to the mile. Locally, however, the beds lie flat or dip in other directions.

Local Structure

Of the minor or local structural features, closed anticlines, plunging anti-

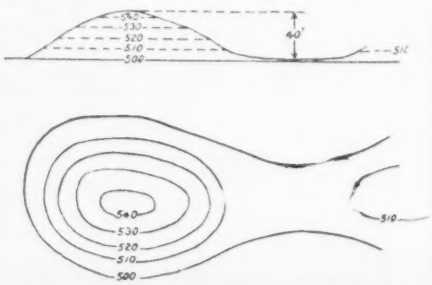

FIGURE 3.—Sketch showing an anticline with closure of about 40 feet.

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clines, and structural terraces have been found to be commonly associated with commercially important accumulations of oil and gas. A brief description of these features is given below.

Closed anticline.—A closed anticline (see fig. 3) is a fold or flexure of the rock beds from whose crown or summit the beds dip in every direction. The outline of a closed anticline, as revealed by the outcrop of its constituent beds where the anticline has been worn down by erosion to a nearly horizontal plane, ranges from a circle to a convoluted, highly irregular line. An anticline that is not more than twice as long as it is broad is commonly called a dome, but dome is an elastic term, and no hard and fast rule may be laid down for its application.

The closure of an anticline is measured by the shortest vertical distance in any direction from the summit to a point where the direction of dip is reversed. In the accompanying sketch of a closed anticline (see fig. 3) the highest closed contour represents an elevation of 540 feet and the lowest an elevation of 510 feet. The difference between these two elevations, plus an indefinite distance, not exceeding a contour interval, which the saddle lies below the 510-foot contour and a similar indefinite distance which the crest of the dome rises above the 540-foot contour, gives the amount of closure —about 40 feet.

Plunging anticline.—A plunging anticline (see fig. 4) differs from a closed anticline in that there is one direction in which the rocks do not dip away from the crest. It may be either symmetrical or steeper on one side than the other.

Terrace.—The term "terrace" in structural geology means approximately the same as in topography or landscape gardening, indicating a nearly level surface with a slope falling away rather steeply on one side and rising sharply on the other. (See fig. 5.) The flat portion of the terrace is called the step, the part consisting of beds sloping upward from the step is called the upper slope, and the part consisting of beds dipping downward from the step is called the lower slope.

Structural Features of the Wiles Area

In the Wiles area the structural features of the types that are known elsewhere to be associated with oil accumulation are limited to the terrace and the plunging anticline. Three of the anticlines cross the area in a northwesterly direction, and several pronounced terraces occur in different parts of the area. It is not improbable that all the surface structural features observed are but slight reflections of more pronounced features occurring in the Marble Falls and Ellenburger formations below the surface.

Bills Creek plunging anticline.—In squares A-9 and B-10 there is a pronounced anticline plunging to the northwest. The north-south cross section of this flexure is an arch which is slightly steeper on the south side than it is on the north. The portion of the fold nearest the east margin of the area is the most pronounced, and it is possible that the continuation of the anticline in the Strawn area, to the east, which has not been mapped, may be more pronounced than the part that falls within the Wiles area. At the time of mapping no wells

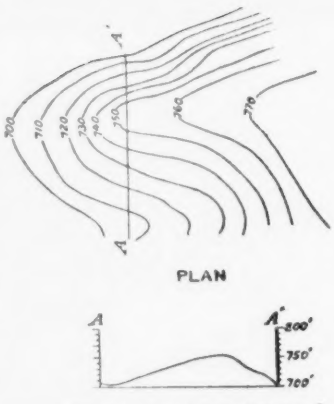

FIGURE 4.—Sketch and cross section of a plunging anticline.

had been drilled in this vicinity, and thus no data are available concerning the presence of oil in this anticline.

Wiles plunging anticline.—The Wiles plunging anticline extends entirely across the Wiles area, from square B-3 on the east to square L-8 on the west, the trend being approximately N. 45° W. It is an extremely gentle fold, although in squares G-5 and L-8 there are local accentuations that make it more prominent, and in squares A-3, B-2 and B-3 there is a terrace-like flattening. This plunging anticline is intersected in square E-6 by the Flat Rock Creek terrace. The fact that this anticline is so continuous and regular points to the probability that it is merely a reflection of a much more pronounced fold in the deeper beds.

The first oil produced in the area of this anticline was obtained in the Palo Pinto Oil and Gas Company's Swenson No. 1 well, in the southwestern part of square B-4. This well is on the lower slope of a prominent structural terrace and was reported to have had an initial production

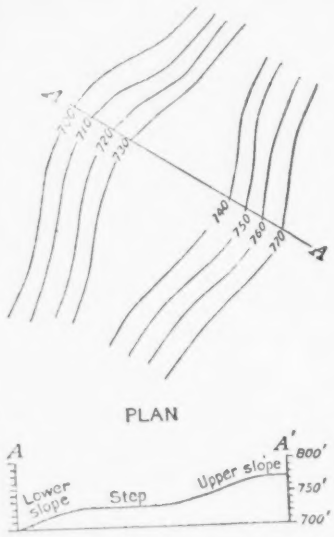

FIGURE 5.—Sketch and cross section of a structural terrace.

of 200 barrels of oil a day at a depth of about 3280 feet.

In the southwestern part of square F-6 the Mid-Kansas Oil and Gas Company completed two wells on the north flank of the anticline. The first of these wells, known as the Jennings No. 1, struck a flow of 12,000,000 cubic feet of gas and a small show of oil at 3440 feet. The second well, known as the Satterfield No. 1, was reported to have had an initial production of 411 barrels of oil a day at 3495 feet.

In the northeastern part of square L-7 a well drilled on this anticline by the Gulf Production Company was reported to have had an initial daily production of five barrels of oil at 4125 feet.

Tiffin plunging anticline.—The Tiffin plunging anticline is a small fold that extends across squares I-2 and H-2 and probably continues farther to the southeast beyond the limits of the area mapped. No wells had been completed on this anticline at the time it was mapped.

Flat Rock Creek terrace.—The step of the Flat Rock Creek terrace covers parts of squares C-9, C-8, D-8, D-7 and D-6 and extends from square E-6, where it joins the Wiles anticline, to square C-10, where it joins the Bills Creek anticline. The step of this terrace dips gently to the northwest, but the dip is much less than that of either the upper or lower slopes.

In the northeast corner of the area there are three wells that obtain gas from the shallow sands of the Strawn formation. A widening of the contours in this area suggests that two of these wells are on the lower slope of a terrace which is more pronounced in the area to the north than it is in the Wiles area. The easternmost well is on the highest part of the step of the terrace.

Hagaman terrace.—In the southwestern part of the area the rocks dip to the northwest at about half their normal rate, giving rise to a prominent terrace. Only the step and upper slope of this terrace are exposed in the Wiles area, but the terrace is known to extend into the Lacasa area on the west.[12] The first oil produced on this terrace in the Wiles area was obtained in the Brazos River Oil Company's Massenburg No. 1 well, in square L-4. This well had an initial flow of 2427 barrels of oil a day. In square L-3 the Superior Oil and Gas Company's Hagaman No. 1 produced 150 barrels of oil a day when first brought in.

A well drilled by the Columbia Oil and Gas Company on this terrace in the southwestern part of square K-2 is reported to have had an initial production of five barrels of oil a day at a depth of 3479 feet but later was nonproductive. A short distance north of this well, in the same square, the Weimer Oil Company drilled a well which had an initial production of 15 barrels of oil a day at 3475 feet.

Other terraces.—In the northwest corner of the Wiles area a well drilled by the Texas and Pacific Coal and Oil Company in square J-12 was reported to have had an initial production of 700 barrels of oil a day at 3600 feet. This well is on the lower slope of a slight terrace. The Texas and Pacific Coal and Oil Company's Veale No. 1 well, a short distance west of square L-11, in the Lacasa area,

[12]Ross, C. S., The Lacasa area, Ranger district, north-central Texas: U. S. Geol. Survey Bull. 726, p. 309, 1921.

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had an initial production of 725 barrels of oil a day with some gas at 3992 feet.

Relation of Surface to Subsurface Structure

The contours on the accompanying structure map (Pl. VIII) are drawn to represent the attitude of the rocks near the surface and do not represent the exact structure of the deeper beds. At the time the mapping was done only a few wells had been drilled in this area, and information on the relation of surface to subsurface structure was not available. In the Ranger field,[13] where many wells have been drilled and the subsurface structure has been worked out, most of the surface terraces are expressions of subsurface terraces and most of the plunging anticlines are the surface expressions of subsurface closed anticlines.

OIL AND GAS SANDS

Sands of the Strawn formation.—In the vicinity of Strawn, about five miles east of the Wiles area, the sandstone beds of the Strawn formation have been yielding oil for a number of years. The wells are shallow, and the production averages only a few barrels of oil a day per well. In the logs of wells in the Wiles area (see Pl. IX) sandy beds or zones are recorded throughout the Strawn formation, but no mention is made of oil coming from the upper sands. Toward the base of the Strawn the sands are much thicker and more persistent. The log of the Swenson No. 1 well of the Palo Pinto Oil and Gas Company, in square B-4, reported showings of oil from the Strawn sands at 2075 and 2370 feet.

Sands of the Smithwick shale.—In the Wiles area the Smithwick shale is made up almost entirely of black fissile shale and black limestone. A few well logs record sandy zones in this formation, but it is not believed that they are of sufficient thickness and persistency to be productive. North and west of the Wiles area the limestone (Caddo lime or Breckenridge lime of drillers) which occurs near the middle of the Smithwick shale is the principal producing bed.

Sands of the Marble Falls limestone.—The larger part of the oil that was being produced in the Wiles area at the time the work here reported was done was obtained from a sand about 300 to 450 feet below the top of the Marble Falls limestone. Other sands in the Marble Falls were recorded, but they are not productive. Since this work was done there has been extensive development in this area, and it is probable that other producing beds have been found.

[13]Reeves, Frank, Geology of the Ranger oil field, Texas: U. S. Geol. Survey Bull. 736, pp. ——, 1922 (Bull. 736-E).

KEY TO ABBREVIATIONS

Following is the explanation of abbreviations and signs used in drilling reports, completions, etc.: *—dry, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling; N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudded; sr—side reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

Letters of a Coastal Bollweevil to His Sweetheart

Paul drives over to Kosse to ply his trade as a geologist and has some ride. The driver of the car came near running over Wallace Pratt of the Humble Oil & Refining Company enroute and Paul almost had a fit when he learned that such a well known geologist turned out of the road to let him go by.—The Editor.

my lovin cleo:

i jes nacherly been missin you more this wk. than i have mist you in a long time. i bin up in wishita fals assosating around with some oil men and when they gotten thru with me one nite i fealt so bad that i just wisht we was married and i didnot haf to go round with these wild birds no more. i wint up 2 wishita fals with the same gy whitch i rode to kosey with on act. of it not costin me nothin to ride but the fear of deth, and us noble geologists has got not to fear nothin to stay in this biznes.

we left dallas at 5 pm in the afternoon and started to wishita fals with the idear of gettin their in 3 hrs. and we wood of did it only we was ridin in a autymobile insted of a airyplane. but onst when we hitten a bump in the rode and awl 4 wheels was in the air 2 the same time, i thoughten we was just as well as in a airyplane. so we gotten only to bowie whitch is a good town as they is in that co. (it was the only town i seen their). We stopt at a hotel cald John's plase and a gy named al reed from dallas he was with me and a fellr from houston calld williams was also helpin to hold down that autymobile. well al sez

"i want a room with a bawth."

"we got a plase jes like a seety," sez the mgr. of the hotel and i ast al if i cood sleap in the bawth room with him, and he says,

"i wood not sleap with no man livin," and wms he spoken up and says

"you must of bin in the navy.'"

well we wint down the st. 2 1 of these annexts like the 1 down 2 bryan only it wasnot in no movin pitcher house, and we wint in 2 look at al's room with bath, and shore enuff it was a room with a bed and a bath in the middle of it, but al didnot like it none.

he was soar because their wasnot no watr connectshuns on it and in it was

1 saddl with blanket.

1 cat with kittins

1 dirty shirt

1 cockroatch, ded.

2 peeses of pipe

1 chaw of chawd terbacker.

well, i figgrs that if a gy is so clean as 2 want 2 take a bath as erly as toosday nite he has got some work comin 2 him carryin watr to his bathtub, so i gess al aint got no reel kick comin.

in the nornin i ast him how he slept and he sed he had a fine dreem but that he didnot finish it and the next nite at wishita falls he had the hotel mgr. put a saddl and a cat with kittns in the bath tub so as he cood go 2 sleep under the same condishuns. he sed the dream was somthin about him gettin married.

wel, them fellrs up to wishyta falls is good gys but they donot no nothin about the geology of perdoocin oil, and when i told them i was a geologist they said if they was me they wood not tell it to anybody, becaus the geologists had condemed that cuntry long befoar they was any oil got their. wel i told em i was not that kind of a geologist becaus i never did condem no land if the gy that owned it was desent enuf 2 pay a good prise for a report, so i gess thay awl have got a lot of respect for my geologizin up their now.

we wint up 2 electra and past the pipe Lne the tex. co is layin up their and when we stops 2 look at it, a lady in a ford which was towerin the cuntry she drove up and ast what was they doin.

"well, "says the foreman," we are diggin a well, and this here pipe is going in the hole and if they is enuf pipe we will dig another hole. we use the pipe to suck the oil outen the grownd."

"wel, do tell," says the woman. "And how do you suck it out?"

"oh, they is plenty of suckers as steps and asts us questshuns," he sed, and i bet she didnot ast no more questions that day.

we gotten out at a lease at electra called the griswold oil co leese and met a fine young fellr whitch was runnin it and he showd us awl over the leese. we walkt out toward a little house that lookt like a privy, and i lookt inside and there was a creem seperatr in side and i ast the gy. i asys.

"air you in the dairy bizness, 2?"

he laft at me and sed that was a bs seperatr and i sez how does it work, and he sez "we pu the bs in at one plase and turn on the jooce and the good stuff comes outen one plase and the bad part of the bs comes out at another plase."

and i gotten to thinkin, honey, that if you was 2 run that gy Red whitch has been callin on you while i am gone, threw this instermint, they wood not enuf good stuf come out to tell it had bin a man. so you had better lay offen goin with him.

with love,

yo paul

SUPPLY TRADE PERSONALS

J. E. Iseman, plant manager for the Lucey Manufacturing Corporation at Houston, Texas, returned Monday from a three weeks vacation spent in New York City and vicinity.

W. E. Bryan, manager Mexia branch of Lucey Manufacturing Corporation, was in Houston last Saturday to discuss the company's future plans in connection with activities at Kosse. Mr. Bryan returned to Mexia in a new Ford car, which will be used at his branch.

B. B. Lacy, Turbolite department of Lucey Manufacturing Corporation, Houston, Texas, is in Mobile, Alabama, extending the sales of this well known lighting machine.

W. L. Childs, of Houston, president of the Boykin-Childs Tool Company, was in Shreveport this week.

S. P. Brown, sales manager of the Hughes Tool Company, has returned to Houston after a strenuous week in the Mexia-Kosse section. He says that the Kosse district will be a fine place to show what good speed Hughes bits will make at a great depth.

W. D. Wilson, president of the Wilson Supply Company, Houston, Texas, left this week to visit the Somerset and Mirando fields. Mr. Wilson will probably be gone a week or ten days.

O. A. Daigle, field representative of F. W. Heitmann & Company, Houston, Texas, is in Beaumont this week in interest of the firm.

Ed. J. Drake, district manager of the Continental Supply Company, Houston, Texas, has recovered from the effects of the "dengue" and is on the job again. Mr. Drake will spend the week inspecting the company's stores in southern Arkansas.

R. H. Christie, assistant district manager of the Oil Well Supply Company, Houston, Texas, left this week with his family for a week's fishing trip. Ralph told all the boys to place their orders early for fish.

Walter A. Drake, assistant district manager of the Oil Well Supply Company, Ardmore, Oklahoma, and his wife returned home after a two week vacation spent with his brother, E. J. Drake, district manager Continental Supply Company, Houston, Texas.

W. H. Curtin, district manager of the Republic Supply Company, Houston Texas, is out again after a having a round with the "dengue", but says he still feels the effect of the plague.

C. A. Leavens, president of the Southern Engine & Pump Company, headquarters, Houston, Texas, is spending his vacation at Estes Park, Colorado.

Carl Foley, in charge of Kansas stores for the Oil Well Supply Company, is visiting the home office at Pittsburgh. Mr. Foley's home was formerly in Pittsburgh and he has been attached to the sales force of the Oil Well Supply Company for some time.

D. J. Brown, treasurer of the Oil Well Supply Company, Pittsburgh, Pennsylvania, was given a dinner celebrating his 35th Anniversary with the company, which occurred on August 25. All officers of the company were present. Mr. Brown started with the Oil Well Supply Company as a messenger boy in the Pittsburgh office 35 years ago and has been with the company continuously since that time.

W. B. Grover, manager of the Pittsburgh sales offices of the Oil Well Supply Company, attended the Natural Gas Convention held at Clarksburg, West Virginia.

John M. Post, district manager of the gulf coast and southern district of the Oil Well Supply Company, is spending several weeks in the home office at Pittsburgh. Mr. Post believes that business will show a gradual increase and feels that there will be no further reductions in the present price of crude but that a steady increase will be noticeable. He expects to return to his office about September 1.

H. B. DeRousse, manager of tool sales of Oil Well Supply Company, is making a trip through the Wyoming and Montana districts, investigating conditions and visiting the supply stores.

M. L. Westmoreland, factory representative of the American Well & Prospecting Company, headquarters at Corsicana, Texas, has been working out of Houston for several years, but now wants the boys to know that Corsicana will be his headquarters in the future.

R. E. Kimsey and H. G. Richards, both of the Frick-Reid Supply Company's sales force at Houston, Texas, have returned from their vacations spent in Tulsa, Oklahoma.

W. H. Toliver, city salesman for F. W. Heitmann, Houston, Texas, reports that the "dengue" should be called the "damnit" fever. Boys, ask Tollie if bootleg tasted the same or better.

M. L. Booker of the Republic Supply Company, Houston, Texas, is wondering why his "old wartime partner", J. F. Carter, Jr., manager Mid-Continent office of the OIL WEEKLY, Tulsa, Okla., didn't come around to see him while in Houston last week.

Robert J. Miller, sales manager of the Lucey Manufacturing Corporation, Houston, Texas, returned last week from a trip to Chicago and Lucey's plant at Chattanooga, Tennessee. When Bob got up in the mountains of old Tennessee and saw the smoke winding up through the tree tops from the flue of a moonshine distillery he said, "this is the life."

Nat Guiberson, treasurer of the Guiberson Corporation, Houston, Texas, returned last week from an extended trip to the Mexia, El Dorado and Haynesville fields.

GARDNER

Products for Oil Service Sold by

The Atlas Supply Co.....Muskogee and Branches
F. W. Heitmann Co., Houston, Texas
Hardwicke-Etter Co., Sherman, Texas
Pelican Well Tool & Supply Co..... ..... Shreveport, La.
C. T. Patterson, Inc., New Orleans
Kirk W. Eichelberger, San Francisco
Alamo Iron W'ks, San Antonio, Tex.
Norvell-Wilder Hdw. Co., Mexia, Tex.

THE GARDNER GOVERNOR COMPANY, Quincy, Illinois

Pumps—Govenors—Compressors

PHOENIX IRON WORKS CO.
MEADVILLE, PA.

Steel Storage Tanks

All Sizes

Stills — River Crossing Clamps — Condenser Boxes
Agitators — Special Equipment — Filters

Our 56 years experience insures Service and Quality

512 Slaughter Bldg., Dallas, Texas — 410 Mayo Bldg., Tulsa, Okla.

PERSONAL MENTION-MEN YOU KNOW

A. E. Underwood, driller from West Virginia, is visiting at Tampico.

Willard Foster, president of the Ozark Pipe Line Company, has returned from a visit to Chicago.

Offices for the Westcott-Greis Company of Tulsa are being established at Casper by I. E. Marshall.

E. E. Shock, president of the Indiahoma Refining Company of St. Louis, was a Tulsa visitor last wek.

F. B. Lander, independent oil operator with offices at Wichita Falls, was a business visitor in Eastland late last week.

R. Z. McGowan of the Pure Oil Company has returned to Tulsa after a visit to Philadelphia and Atlantic City, N. J.

C. N. Scott, formerly vice president of The Texas Company, has returned to his home in Houston from a vacation spent in California.

Former governor of Oklahoma, and organizer of the Frantz Corporation, Frank Frantz, is making an inspection tour of the Montana fields.

H. N. Greis is in Louisville, Ky., for the annual horse show. He has a string of saddle and light harness horses entered in the Kentucky show.

Warren Baker, formerly a South Texas boy, now in the oil business in Mexico, recently visited Mexico City. His headquarters are in Tampico.

J. J. Bissett, manager of the Fort Worth district offices of the Continental Supply Company, was a business visitor in Wichita Falls late last week.

E. C. Noble, in charge of stocks at the Tulsa store, was at the Pittsburgh headquarters of the Oil Well Supply Company during the past week.

C. E. Sampson, general manager of the Con-Mex Oil Company, has returned to his headquarters at Tampico, after two months vacation in the States.

A. B. Patterson, production superintendent for The Texas Company in South Texas, headquarters at Houston, is back at home from a vacation spent in Colorado.

Don O. Long, agent for the Sinclair Oil and Gas Company at Wichita Falls for the past 2½ years, has been transferred to the Tulsa offices of the company.

James K. Crawford, president of the Brothers Oil Company, left Tulsa last week upon receipt of information that the Seay and Cranfill well had been completed near Currie. His companies own acreage and production throughout the whole Mexia district.

After being the guest of friends here for a week, H. V. De Rousse, general sales manager of the tool department of the Oil Well Supply Company, has returned to Pittsburgh.

L. V. Hull, vice president of the Paragon Oil Company and manager of the Wichita Falls district offices, departed late last week on a business trip to points in Oklahoma and Kansas

J. L. McMahon, general superintendent of the North Texas division of The Texas Compnay with offices at Wichita Falls, departed last week on a business trip to Pittsburgh and points in the East.

W. T. Voorhees, independent operator in the Somerset field, south of San Antonio, has just gone to California to make his home, and is looknig over the new fields in the southern part of that state.

Victor Swanson, president of the Swanson Oil Company, which is drilling several wildcat tests in Hall County, Texas, returned to his headquarters at Hedley late last week from a business trip to Wichita Falls.

Bert Broday, general superintendent of the North Texas district for the Humble Oil and Refining Company with offices at Wichita Falls, journeyed up to Amarillo last week on business for the company.

Major Henry D. Moore, field superintendent for the Midwest Refining Company at Baxter Basin field in Wyoming, has resigned his position and has left for a few weeks vacation. J. J. Forman will succeed Mr. Moore.

W. B. Flynn spent a day in Tulsa last week en route to Houston, where he will take a place with the West Columbia Oil Syndicate. He spent most of the past year in Venezuela, which he classes as a "good place to be from."

Fred Ennist, in charge of the Oil Trade Journal office in Houston, has returned from a trip to New York where he paid a long-delayed visit to Broadway. Ask him about that vaudeville he attended and the second girl from the end in the chorus.

Burke H. Sinclair, director of industrial relations for the Midwest Refining Company with headquarters at Casper, Wyoming has been promoted to a brigadier general in the Officer's Reserve Corps. Mr. Sinclair formerly held a commission as colonel.

A. A. Perkins of Los Angeles, head of the Perkins Oil Well Cementing Company, will leave about September 16 for the Wyoming fields and will swing down through Oklahoma and Texas, making preparations for extending his company's activities to these states.

C. H. Rouse, field salesman for the Oil Well Supply Company in North Texas district, was in Pittsburgh recently discussing sales possibilities in his territory.

Chester Longan, secretary to the assistant manager of the Agwi at the Tampico offices of the company, is being transferred to the Mexico City offices of the same company.

George Hyde, president of the Hyde Production Company, Houston, Texas, is spending several weeks in Toronto, Canada. The boys in the home office don't know whether it is the lure of the Yukon or the "brass rail" that is keeping Mr. Hyde away from Houston so long.

W. N. Finnegan, Jr., statistician for the Humble Oil and Refining Company, headquarters at Houston, has returned to Houston from Kerrville in his new Oldsmobile. He had very little trouble other than paying for a couple of Ford fenders which he clipped off while making short cuts in traffic.

A. E. Mier, Jr., drilling contractor at El Dorado, Ark., was in Houston this week making arrangements to assist in placing on the market the Humason pump for oil wells. He will become a member of the firm owning these pumps, as he says the pump will work where sand is very bad.

J. F. Brain, Western representative for the Standard Seamless Tube Company, has just joined forces with Thos. H. Pike of Los Angeles, dealers in a full line of oil country goods. Pike was formerly connected with the Republic Supply Company and he and Brain were associated together with this company for several years.

A. C. Camp, secretary and treasurer of the Camp Oil & Gas Company of Wichita Falls, and Miss Marion Crabtree of Wichita Falls were married August 28th in Colorado Springs, Colorado, and departed at once on a trip to Salt Lake City and points along the west coast. Mr. and Mrs. Camp will make their home in Wichita Falls upon the completion of their trip.

Captain J. F. Lucey entertained a number of Mid-Continent and California oil men with a luncheon at the California Club in Los Angeles recently, for the purpose of bringing together representative operators of the two sections. Those present were: J. C. Flannigan of Tulsa; D. S. Bole, Tulsa; A. C. Glassell, Tulsa; R. W. Norton, Shreveport; Eugene Holman, Shreveport; R. J. O'Brien, Shreveport, and James O'Donnell, F. M. Aiken, Pete Spellacy, Victor Rossetti, F. L. Feisthamel, E. J. Miley, Fred V. Gordon, Edward Everett, Jr., Ralph Arnold, Max Whittier, Thomas O'Donnell, L. P. St. Clair, and Captain Lucey.

SQUEAKS from the BULL WHEEL

One of the newly-rich families in a California field took a commodious home in Long Beach. The servant question was unusually serious to the inexperienced housewife. Out of patience at last she dismissed her maid with some gusto. But the maid was equal to the occasion, as usual, and determined to play even.

"No matter—I'm a better looking woman than you are," she said with a haughty jerk of her head, to the mistress. "And do you know who told me that? Your husband—that's who."

Waiting a moment for that to soak in, she said further:

"And I can kiss better than you can too—more fond and passionate. You know who told me that?"

"My husband, I suppose."

"No—your chauffeur."

They were speaking of that much talked of national poll on the prohibition question. "Are you in favor of light wines and beer?" one asked.

"H— no," answered the other rough neck, "I'm in favor of Scotch whiskey."

METERS

There are meters of accent,
There are meters of tone,
But the best way to meet her
Is to meet her alone.

There are letters of accent,
There are letters of tone,
But the best way to letter
Is to letter alone.

—Marion Line.

FATHER'S CHANGE

Willie (to his father who had recently married the second time)—"There's a shop in the High Street just like you, Daddie."

Father—"Shop like me? What do you mean?"

Willie (getting near the door)—"Why it's under entirely new management."—Edinburgh Scotsman.

Settlement Worker—"What makes your husband look so worried, Mrs. Mixer?"

Mrs. Mixer—"He's dreadin' the time ma'am when he'll have to go back to work."

"Whom does he work for and what does he do, Mrs. Mixer?"

"He works for the Salvation Army, ma'am. He Santa Clauses."—Mid West Review.

OUR AUTO DEPARTMENT

Don't expect the police to report punctures. The tire always makes the report.

Never fail to keep an extra tire around the house for the baby to cut his teeth on.

If you feel you must use a one-way street the wrong way, back through it and fool the cop.

Never kiss a girl in a taxi cab. It's so easy to acquire a wife that way.

Unless you knew the corpse, it is decidedly unclubby to go to a funeral in an auto just for the ride. Gasoline is higher, you know.—New York World.

A prominent young man employed by one of the larger oil companies with headquarters at Tampico, sends The OIL WEEKLY the following want ad clipped from a Tampico newspaper:

Position Wanted

Girl wants position as house keeper for bachelor or as child's nurse. Speaking English and French. Odette, Calle Estado No. 19. 9-2

We understand the young man is seriously considering giving the young lady a position.

HOTT ON VACATION

Jack Hott, general manager of the American Chamber of Commerce of Tampico, leaves tomorrow morning for the States where he will spend a five weeks vacation. Mr. Hott will join Mrs. Hott at San Antonio and they will go from there to New York, via Chicago and Niagara Falls.—Tampico Tribune.

Yep, Hot always goes on vacation after the summer is over.

THE FIEND

I saw a guy in a stiff hat
and a red necktie standing
on a soap box the other day.
He yelled, "Does anybody want a drink
Of Old Kentucky Bourbon?"
In an instant five hundred
were assembled.
"Does anybody want
A drink of good old Bourbon?"
he repeated.
"I do," five hundred parched
Throats replied.
He said, "So do I, but I can't
get it now—but I
am selling a little double
Action collar button which—"
when the mob dispersed
all I saw was
The red necktie.

"Sambo, dis mawnin' de boss he says to me, 'Mose, yo' show our gues's every cuhtesy. An' mo'n dat, yo' mus' use tact.' Now, Sambo, whut did he mean by cuhtesy an' whut did he mean by tact?"

"Well, Mose, I displains dat to yo.' Dis mawnin' I opens the baf-room do' and dah was a woman standin' in de tub, and I shuts de do' quick like, an' I seys: 'Scuse me, suh,' Now, Mose, dat 'scuse me' was cuhtesy, but dat 'suh' was tact.

H. A. Speer, the Duval County (Texas) oil king, was in Houston on business this week.

Carlton Clymer, Tampico manager for the National Supply Company, spent his two weeks vacation this year at San Luis Potosi Mexico.

OIL FIELD SUPPLIES

PUMPS—Fittings, Valves, Packing, Beltings, Wire Lines, Bull Ropes, Drilling Cables, Boilers and Complete Pumping Equipment

REFINERY TOOLS AND SUPPLIES

Distributors of South Chester Wrought Iron and Steel Casing, Tubing, Rotary Drill and Line Pipe

PETROLEUM SUPPLY COMPANY, New York, N. Y.

Stores:
HOUSTON, TEXAS
MEXIA, TEXAS
EL DORADO, ARKANSAS

Representatives:
SHREVEPORT, LA.
HAYNESVILLE, LA.
ORANGE, TEXAS

7 Plants

TANKS TANKS TANKS

ANY SIZE ANY CAPACITY

Fabricated only or erected on your grades. Our fabricating shop located near the HEART of the oil field. Get our prices before placing your order or we both lose.

UNITED IRON WORKS, Inc.

KANSAS CITY, MO.
—SALES OFFICES—
Dallas, Texas Tulsa, Okla.

GUIDE FOR PURCHASERS

Air Lift Pumping Equipment
Gardner Governor Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

Attorneys
Hirsch & Hannay
Vinson, Elkins & Wood

Agitators
Chicago Bridge & Iron Works
Kaw Boiler Works Co.

Banks
Exchange Banks of Tulsa
First National Bank of Tulsa

Belting
Atlas Supply Co.
Bridgeport Machine Co.
Frick-Reid Supply Co.
Lucey Mfg. Corp.
Norris Bros.
Oil Well Supply Co
The National Supply Cos.

Boilers
Atlas Supply Co.
Bridgeport Machine Co.
The Brownell Co.
Frick-Reid Supply Co.
Kaw Boiler Works Co.
The National Supply Cos.
Oil Well Supply Co.
Oklahoma Tool & Sup. Co.
Texas Supply Co.
Titusville Iron Works Co.
Tulsa Boiler & Sheet Iron Wks.
United Iron Works, Inc.
Youngstown Boiler & Tank Co.
See Oil Well Supplies & Tanks

Bolt Machines
Williams Tool Corporation

Burners
Gaso Pump & Burner Mfg. Co.
Norris Bros.

Bull Wheels
International Derrick & Equipment Co.

Casing Shoes
Bridgeport Machine Co.
Gulf Coast Machine & Sup. Co.
The National Supply Cos.
Pelican Well Tool & Supply Co.

Compressors
Atlas Supply Co.
Clark Bros. Co.
Gardner Governor Co.
F. W. Heitmann Co.
Hope Engineering Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.
United Iron Works, Inc.

Cordage
The National Supply Cos.

Couplings
Harrisburg Pipe & Pipe Bending Co.

Crown Blocks
American Well & Pros. Co.
Boykin Machinery & Supply Co.
Gulf Coast Machine & Sup. Co.
International Derrick & Equipment Co.
Lucey Manufacturing Corp.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Dehydrating Processes
W. S. Barnickel & Co.
De Laval Separator Co.
Petroleum Rectifying Co.

Derricks and Rigs
International Derrick & Equipment Co.
Lee C. Moore & Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Robertson-MacDonald Lbr. Co.
Superior Tube Co.

Diamond Core Drills
Sullivan Machinery Co.

Ditchers
Buckeye Traction Ditcher Co.

Draw Works
American Well & Pros. Co.
Boykin Machinery & Sup. Co.

Drilling Cables
Bridgeport Machine Co.
Frick-Reid Supply Co.
F. W. Heitmann Co.
The National Supply Cos.
Peden Iron & Steel Co.
Williamsport Wire Rope Dist. Co.

Drilling Machines
Bridgeport Machine Co.
Parkersburg Rig & Reel Co.
Robertson-MacDonald Lbr. Co.

Drill Pipe
Reading Iron Co.
Standard Seamless Tube Co.
Texas Supply Co.

Drilling Equipment
American Well & Pros. Co.
Bridgeport Machine Co.
Union Tool Co.

Drive Pipe
Reading Iron Co.

Electrical Equipment
Enameled Metals Co.
Southwest Gen. Elec. Co.
Westinghouse Elec. & Mfg. Co.

Elevators
Bridgeport Machine Co.
Dunn Manufacturing Co.
Gulf Coast Machine & Sup. Co.
Norris Bros.
Wilson & Willard Mfg. Co.

Engineers
Samuel J. Caudill
F. W. Freeborn Eng. Co.
James Glenn
A. S. Henley
Geo. C. Matson
Lee C. Moore & Co.

Engines, Diesel
Western Machinery Co.

Engines, Gas
Atlas Supply Co.
Foos Gas Engine Co.
Western Machinery Co.

Engines, Gasoline
Western Machinery Co.

Engines, Oil
Atlas Supply Co.
Western Machinery Co.

Engines
Ajax Iron Works
American Well & Pros. Co.
Atlas Supply Co.
Bessemer Gas Engine Co.
Bridgeport Machine Co.
The Brownell Co.
Clark Bros. Co.
De La Vergne Machine Co.
Foos Gas Engine Co.
Frick-Reid Supply Co.
Hope Engineering Co.
Ingersoll-Rand Co.
Lucey Manufacturing Corp.
The National Supply Cos.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Southern Engine & Pump Co.
Titusville Iron Works Co.

Fire Protection
Foamite-Childs Corporation

Fish Tail Bits
American Well & Pros. Co.
Gulf Coast Machine & Sup. Co.
Pelican Well Tool & Sup. Co.
W. K. M. Company

Floor Circle Brace
Dunn Manufacturing Co.

Fuel Oil
Empire Refineries
Gulf Refining Company
Sinclair Refining Company
White Oil Corporation

Gasoline Extraction Compressors
Bessemer Gas Engine Co.
Clark Bros. Co.
Gardner Governor Co.
Ingersoll-Rand Co.
Kaw Boiler Works Co.
Sullivan Machinery Co.

Gasoline and Oil Storage Tanks
Chicago Bridge & Iron Works
Kansas Cty Struct. Steel Co.
Kaw Boiler Works Co.
Parkersburg Rig & Reel Co.

Gas Traps
Trumble Gas Trap Co.

Gauges
The Foxboro Co., Inc.

Geologists
Samuel J. Caudill
James L. Darnell
Alexander Deussen
Dorsey Hager
A. S. Henley
Robert T. Hill
Edwin B. Hopkins
Geo. C. Matson

Gauge Boards
The Foxboro Co., Inc.

Genuine Wrought Iron Casing
Reading Iron Co.

Grips and Clamps
Norris Bros.

Hose
B. F. Goodrich Rubber Co.

Laboratory Equipment
Fort Worth Laboratories

Lighting Systems
Bridgeport Machine Co.
Lucey Manufacturing Corp.
Westinghouse Elec. & Mfg. Co.

Line Pipe
Reading Iron Co.

Lumber
Robertson McDonald Lbr. Co.

Maps
James Glen
Rock Map Co.

Meters
The Foxboro Co., Inc.

Motors
Southwest General Electric Co.

Oil Field Supplies
American Well & Pros. Co.
Atlas Supply Co.
Boykin Machinery & Sup. Co.
Bridgeport Machine Co.
Frick-Reid Supply Co.
Gulf Coast Mach. & Sup. Co.
Gardner Governor Co.
B. F. Goodrich Rubber Co.
Kansas City Struct. Steel Co.
The Kelly & Jones Co.
Lucey Manufacturing Corp.
Lee C. Moore & Co.
The National Supply Cos.
Norris Bros.
Oil Well Supply Co.
Oklahoma Tool & Supply Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Southern Brass Mfg. Co.
Texas Supply Co.
United Iron Works., Inc.
Union Tool Co.
Western Supply Company

Oil Investments
Kosmos Petroleum Co.

Oil Producers
Standard Oil Co. of N. J.

Packers
The Guiberson Corporation
Layne & Bowler
Pelican Well Tool & Sup. Co.

Packing
B. F. Goodrich Rubber Co.
Lucey Manufacturing Corp.
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.

Paints
Peden Iron & Steel Co.

Patents
Hardway & Cathey
Jesse R. Stone

Pipe Grips
Norris Bros.

GUIDE FOR PURCHASERS—Continued

Pipe
Atlas Supply Co.
A. M. Byers Co.
Frick-Reid Supply Co.
F. W. Heitmann Co.
Harrisburg Pipe & Pipe Bending Co.
Interstate Pipe Co.
Lucey Manufacturing Corp.
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Reading Iron Co.
Standard Seamless Tube Co.
Superior Tube Co.
Texas Supply Co
Williamsport Wire Rope Co.

Pipe Machines
Williams Tool Corporation

Pipe Screwing Machines
Buckeye Traction Ditcher Co.

Pipe Threading Machines
Trimont Mfg. Co.
Williams Tool Corporation

Pipe Threading
Williams Tool Corporation

Pipe Tongs
W. K. M. Company

Pipe Vises
J. H. Williams & Co.

Pipe Wrenches
Dunn Manufacturing Co.
The Guiberson Corporation
Trimont Mfg. Co.
J. H. Williams & Co.

Portable Buildings
International Derrick & Equipment Co.

Portable Compressors
Gardner Governor Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

Portable Drilling Rigs
Bridgeport Machine Co.
Lee C. Moore & Co.
Parkersburg Rig & Reel Co.
The National Supply Cos.

Pulleys
International Derrick & Equipment Co.
Lee C. Moore & Co.

Pulling Machines
Myrick Machine Co.
Thrift Hydraulic Casing Pulling Co.

Pumps
American Well & Pros. Co.
Atlas Supply Co.
Axelson Machine Co.
Gardner Governor Co.
Frick-Reid Supply Co.
Gaso Pump & Burner Mfg. Co.
The Goulds Mfg. Co.
Ingersoll-Rand Co.
Lucey Manufacturing Corp.
Norris Bros.
National Transit Pump & Machine Co.
The National Supply Cos.

Pumps
Oil Well Supply Co.
Pelican Well Tool & Sup. Co.
Southern Engine & Pump Co.
United Iron Works, Inc.

Pumping Powers
Kansas City Hay Press & Tractor Co.

Refined Products
Empire Refineries, Inc.
Gulf Refining Co.
Humble Oil & Refining Co.
Producers & Refiners Corp.
Sinclair Consolidated Co.
Standard Oil Co. of N. J.
Sunshine State Oil & Ref. Co.
The Texas Company
Union Petroleum Co.
Warner Petroleum Co.
White Oil Corporation

Recorders
Fort Worth Laboratories
The Foxboro Co., Inc.

Refinery Equipment
Atlas Supply Co.
Chicago Bridge & Iron Works
Frick-Reid Supply Co.
Gardner Governor Co.
Kansas City Struct. Steel Co.
Kaw Boiler Works Co.
Petroleum Iron Works Co.
Phoenix Iron Works Co.
Titusville Iron Works
Tulsa Boiler & Sheet Iron Wks.
United Iron Works, Inc.
Wyatt Metal & Boiler Works

Rig Irons
Frick-Reid Supply Co.
Lucey Manufacturing Corp.
Lee C. Moore & Co.
The National Supply Cos.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Rotary Rock Bits
Hughes Tool Co.

Rotary Fish Tail Bits
Pelican Well Tool & Sup. Co.

Rotary Slips
W. K. M. Company

Separators
DeLaval Separator Co.
Gardner Governor Co.
Trumble Gas Trap Co.

Strainers
Layne & Bowler Co.
J. H. McEvoy & Co.
Pelican Well Tool & Sup. Co.

Structural Steel
Kansas City Struct. Steel Co.
Kaw Boiler Works Co.
Pennsylvania Tank Car Co.
United Iron Works, Inc.

Steel Derricks
International Derrick & Equipment Co.

Steel Crown Blocks
Gulf Coast Mach. & Sup. Co.
Lee C. Moore & Co.
Parkersburg Rig & Reel Co.
Superior TubeCo.
Texas Supply Co.

Steel Storage Tanks
Chicago Bridge & Iron Works
Kaw Boiler Works Co.
The Petroleum Iron Works Co.
Phoenix Iron Works Co.

Sucker Rods
Axelson Machine Co.
Dunn Manufacturing Co.
Norris Bros.
The National Supply Cos.

Stills
The Petroleum Iron Works Co.

Tank Cars
American Car & Foundry Co.
Pennsylvania Tank Car Co.

Tanks
American Tank Co.
Black, Sivalls & Bryson
The Brownell Co.
Chicago Bridge & Iron Works
Columbian Steel Tank Co.
Kansas City Struct. Steel Co.
Kaw Boiler Works Co.
Maloney Tank Co.
Petroleum Iron Works
Phoenix Iron Works
Pittsburgh-Des Moines Steel Company
Parkersburg Rig & Reel Co.
Tulsa Boiler & Sheet Iron Wks.
United Iron Works Co.
Wyatt Metal & Boiler Works
Youngstown Boiler & Tank Co.

Tret-O-Lite
W. S. Barnickel & Co.

Thermometers
Fort Worth Laboratories
The Foxboro Co., Inc.

Threading Machines
Williams Tool Corporation

Tongs
Bridgeport Machine Co.
Dunn Manufacturing Co.
Guiberson Corporation
Norris Bros.
Pelican Well Tool & Sup. Co.
Wilson & Willard Mfg. Co.
J. H. Williams & Co.

Tool Joints
American Well & Pros. Co.
Bridgeport Machine Co.
Hughes Tool Co.
The National Supply Cos.
Pelican Well Tool & Sup. Co.
W. K. M. Company

Tools (Fishing and Drilling)
Bridgeport Machine Co.
Frick-Reid Supply Co.
Hughes Tool Co.
Lucey Manufacturing Corp.
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Sup. Co.
Sullivan Machinery Co.

Traveling Blocks
American Well & Pros. Co.
Boykin Machinery & Sup. Co.
Gulf Coast Machine & Sup. Co.

Tubing Catcher
Dunn Manufacturing Co.
Guiberson Corporation

Tubing
Interstate Pipe Co.
Reading Iron Co.
Standard Seamless Tube Co.

Under-reamers
American Well & Pros. Co.
Bridgeport Machine Co.
Western Supply Company
Wilson & Willard Mfg. Co.

Vacuum Pumps
Gardner Governor Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

Walking Beams
International Derrick & Equipment Co.

Valves and Fittings
Atlas Supply Co.
Chapman Valve Co.
Frick-Reid Supply Co.
F. W. Heitmann Co.
Homestead Valve Mfg. Co.
The Kelly & Jones Co.
Lucey Manufacturing Corp.
Ludlow Valve Mfg.Co.
The National Supply Cos.
Norris Bros.
Peden Iron & Steel Co.
Wm. Powell Co.
Pratt & Cady
Reading Steel Casting Co.
Reading Valve & Fittings Co.
Southern Brass Mfg.Co.
United Iron Works

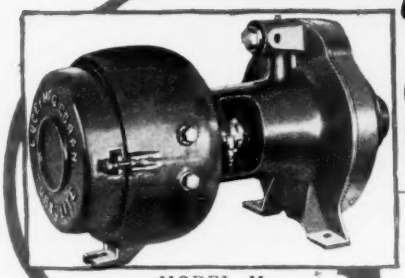
Water Gauges
F. W. Heitmann Co.

Wire Fence
Page Steel & Wire Co.

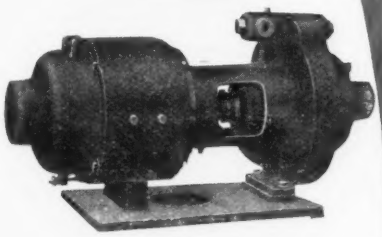
Wire Rope
Bridgeport Machine Co.
The National Supply Cos.
Williamsport Wire Rope Dist. Co.

A POSITIVE PROOF OF TURBOLITE SUPERIORITY

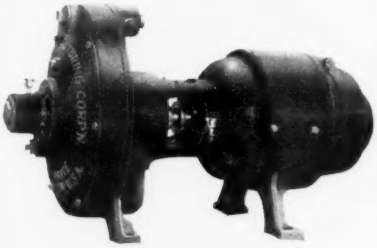
A corps of field engineers is maintained by us to see that users of Turbolites get the utmost possible service from this equipment. This service is free to all users of our equipment. Ask us for details.



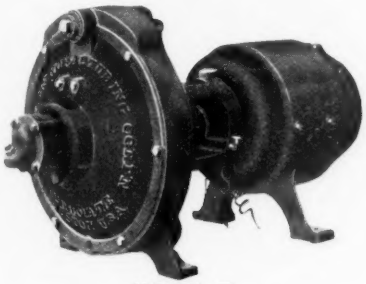
MODEL M
½ K. W.—32 Volts
For Locomotives



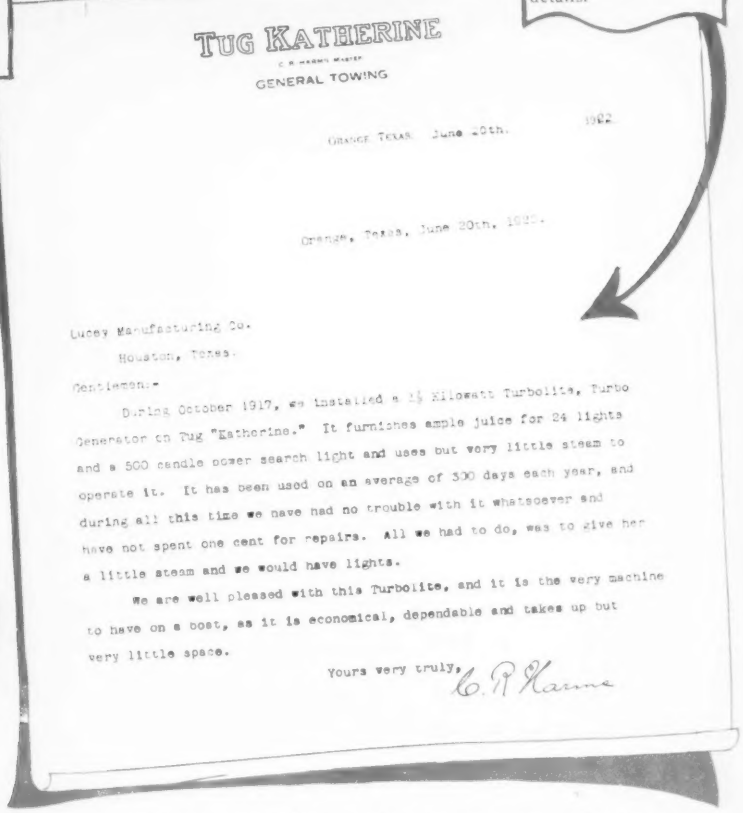
MODEL R
1 K. W.—115 Volts
20 50 Watt Lights



MODEL E
1½ K. W.—115 Volts
30 50 Watt Lights



MODEL K
2½ to 3 K. W.—115 Volts
50 to 60 50 Watt Lights



TUG KATHERINE

C. R. HARRIS, MASTER

GENERAL TOWING

ORANGE, TEXAS. June 20th. 1922

Orange, Texas, June 20th, 1922.

Lucey Manufacturing Co.

Houston, Texas.

Gentlemen:-

During October 1917, we installed a 1½ Kilowatt Turbolite, Turbo Generator on Tug "Katherine." It furnishes ample juice for 24 lights and a 500 candle power search light and uses but very little steam to operate it. It has been used on an average of 300 days each year, and during all this time we have had no trouble with it whatsoever and have not spent one cent for repairs. All we had to do, was to give her a little steam and we would have lights.

We are well pleased with this Turbolite, and it is the very machine to have on a boat, as it is economical, dependable and takes up but very little space.

Yours very truly,

C. R. Harris

ONE OF THE MANY SIMILAR LETTERS WE HAVE RECEIVED FROM SATISFIED USERS

Consistent performance under widely varying conditions has proven the superiority of TURBOLITES in an ever increasing range of service.

On locomotives where they are subjected to the extremes of the elements, and severe vibration; on the decks of dredges where dampness abounds; in the holds of steam vessels under extreme temperature, and in the oil fields, where most unfavorable conditions are met, these units do their work day after day with little attention, giving a maximum of service with a minimum of expense.

A SIZE FOR EVERY PURPOSE

From ½ to 3 Killowatts

Manufactured by

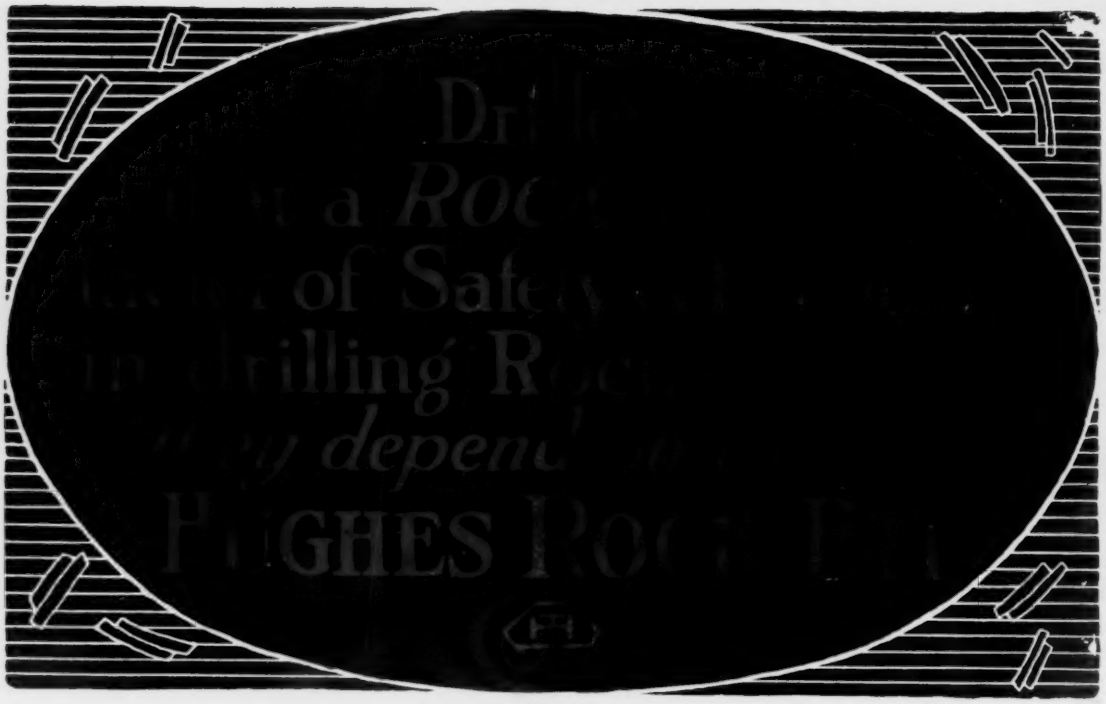
TURBOLITE DIVISION

of

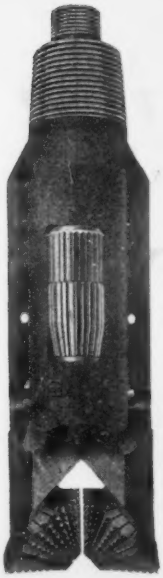
LUCEY MANUFACTURING CORPORATION

HOUSTON, TEXAS

For Sale by Supply Houses Everywhere—Used Wherever There's Steam.



THE HUGHES ROCK BIT



—Prevents crystallization of the drill stem
—Saves the breaking of chains
—Saves fuel oil
—Saves water
—Minimizes labor
—Speeds up drilling

and allows the driller to finish the hole in the least possible time and at the least possible expense.

HAVE A HUGHES ROCK BIT ON YOUR DERRICK FLOOR

Hughes Products Are Stocked by Supply stores Everywhere

Hughes Tools "All Over" the Earth and They It"

HUGHES TOOL Co.

HOUSTON, TEXAS

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